Domestic Violence and Nonfatal Strangulation Assessment

for Health Care Providers and First Responders

Forensic Learning Series

WARNING — This excerpt is intended for use by medical, legal, social service, and law enforcement professionals. It contains graphic images that some may find disturbing or offensive. Minors and/or nonprofessionals should not be allowed to access this material.

STM **Learning,** Inc.

Leading Publisher of Scientific, Technical, and Medical Educational Resources
Saint Louis
www.stmlearning.com

Domestic Violence and Nonfatal Strangulation Assessment

for Health Care Providers and First Responders

Forensic Learning Series

Diana K. Faugno, MSN, RN, CPN, SANE-A, SANE-P, FAAFS, DF-IAFN, DF-AFN
Forensic Nurse
Founding Board Director
End Violence Against Women International
Past President
Academy of Forensic Nursing

Valerie Sievers, MSN, RN, CNS, SANE-A, SANE-P, DF-AFN
Forensic Clinical Nurse Specialist
Forensic Healthcare Consultant
MedLaw Consultants, LLC

Michelle Shores, MSN, RN, MBA-HC, CEN, SANE-A, SANE-P
Director
Forensic Health Services
Palomar Health

Bill Smock, MD
Police Surgeon
Louisville Metro Police Department
Louisville, Kentucky
Medical Director
The Training Institute on Strangulation Prevention
San Diego, California

Patricia M. Speck, DNSc, CRNP, FNP-BC, DF-IAFN, FAAFS, DF-AFN, FAAN
Professor and Coordinator of Advanced Forensic Nursing
Department of Family, Community, & Health Systems
The University of Alabama at Birmingham School of Nursing

STM **Learning,** Inc.

Leading Publisher of Scientific, Technical, and Medical Educational Resources
Saint Louis
www.stmlearning.com

Publishers: Glenn E. Whaley and Marianne V. Whaley
Graphic Design Director: Glenn E. Whaley
Acquisitions Editor: Glenn E. Whaley
Associate Editor: Marika Betker
Book Design/Page Layout: Jennifer M. Jones and Glenn E. Whaley
Print/Production Coordinator: Jennifer M. Jones and Glenn E. Whaley
Cover Design: Jennifer M. Jones and Glenn E. Whaley
Color Prepress Specialist: Kevin Tucker
Developmental Editor: Marika Betker
Copy Editor: Marika Betker
Proofreader: Samantha Koester

Printed in the United States of America.

Publisher:
STM Learning, Inc.
Saint Louis, Missouri 63033
Phone: (314) 434-2424
http://www.stmlearning.com orders@stmlearning.com

Library of Congress Cataloging-in-Publication Data

Names: Faugno, Diana K., 1950- author. | Sievers, Valerie, author. | Shores, Michelle, author. | Smock, William S., author. | Speck, Patricia M., 1948- author.
Title: Domestic violence and nonfatal strangulation assessment for health care providers and first responders / Diana Faugno, Valerie Sievers, Michelle Shores, William Smock, Patricia M. Speck.
Other titles: SANE/SAFE forensic learning series.
Description: St. Louis, MO : STM Learning, Inc., [2020] | Series: Forensic learning series | Includes bibliographical references.
Identifiers: LCCN 2020004507 (print) | LCCN 2020004508 (ebook) | ISBN 9781936590834 (paperback) | ISBN 9781936590841 (epub)
Subjects: MESH: Domestic Violence | Asphyxia--diagnosis | Asphyxia--pathology | Forensic Medicine | Problems and Exercises | Case Reports
Classification: LCC RA1071 (print) | LCC RA1071 (ebook) | NLM W 618.2 | DDC 617.1/8--dc23
LC record available at https://lccn.loc.gov/2020004507
LC ebook record available at https://lccn.loc.gov/2020004508

Contributors

Kathryn L. Bell, MS, RN, SANE-A, SANE-P, DF-AFN
Forensic Nursing Administrator
Tulsa Police Department

Lynn Crosby, BSN, RN, SANE
liveSAFE Resources

Christine Foote-Lucero, MSN, RN, CEN, SANE-A, SANE-P
Forensic Program Manager
University of Colorado Hospital

Karen Marcus, RN, BS, SANE-A
Forensic Nurse
Forensic Health Services
Palomar Health

Sarah Marin, FNP-C, MSN, SANE-A, SANE-P
Forensic Nurse Practitioner
SART/Child Abuse
Forensic Nurses of SoCal, Inc.

Keri Sandy, RN, SANE-A
Forensic RN
Palomar Health Forensic Services

Angelia Trujillo, DNP, MS, RN, WHNP-BC, DF-AFN
Associate Professor of Nursing
University of Alaska Anchorage

Foreword

As a forensic nurse with more than 17 years of experience working with victims of violence across the lifespan, I am pleased to have been given the opportunity to write the foreword to *Domestic Violence and Nonfatal Strangulation Assessment for Health Care Providers and First Responders*, part of the Forensic Learning Series. I have had the opportunity to work with the editors and many of the contributors to this text over the years, and I consider them colleagues and mentors working to improve the response to victims of violence.

The *Manual Nonfatal Strangulation Assessment* was published January 2017 as a part of STM Learning's Forensic Learning Series because the editors realized the need for training related to nonfatal strangulation assessment and care. Now, 3 years later, the editors and contributors to this text have updated the training manual for nonfatal strangulation to encompass domestic violence, male victim strangulation, and cases among the young and the old. There are a wide range of specialties that need a working knowledge of domestic violence and strangulation, including, but not limited to, nursing, medicine, emergency medical services, law enforcement, and legal system agencies. This text is designed to serve as:

— A companion resource to the other titles in the Forensic Learning Series

— An educational resource for forensic nurses seeking to prepare for specialty certification

— A valuable resource for the generalist

— An adjunct resource for nonmedical team disciplines

— An interdisciplinary text recognizing the common knowledge and unique skills of the multidisciplinary team

The editors and contributors bring decades of combined experience to the issue of strangulation assault, its impact on the human body, and the emotional impact to the victim whether they are male or female, young or old. The text relies on the use of standardized language, case studies, and case photographs to support the learning needs of health care providers responding to victims of domestic violence and strangulation. Unique case histories represent the myriad types of violence that impact men and women across the lifespan and the role that strangulation plays in the power and control sought by perpetrators of interpersonal violence. Chapters provide anatomic resources and activities for learning, and they demonstrate best practices for evidence collection, injury care, treatment, and follow-up examination options to serve victims of violence from the initial first responder to physicians/providers, hospitalists, and forensic examiners.

Recognition of strangulation injury and its sequelae has come a long way from a few short years ago when strangulation was considered "just choking," to today, when nonfatal manual strangulation is now recognized as a felony and life-threatening crime. These changes were due much in part to the work of the editors and contributors herein. It is my expectation that this book will provide an effective educational and reference tool for health professionals caring for victims of strangulation.

Angelia Trujillo, DNP, MS, RN, WHNP-BC, DF-AFN
Associate Professor of Nursing
University of Alaska Anchorage

Foreword

"Tell me and I forget, teach me and I may remember, involve me and I learn."

— Benjamin Franklin

It took the murders of 2 San Diego teenagers in 1995 to understand the seriousness and lethality of nonfatal strangulation. Before Casondra Steward and Tamara Smith were killed by their ex-partners, they were "choked." Both of them called the police for help, but neither case was prosecuted because of a lack of sufficient evidence to prove an assault had occurred. As former prosecutors, we should have known more and done more. Back then, we called them "choking" cases, and most choking cases were handled as misdemeanors or simply not prosecuted at all. It was the rare case where strangulation was charged and prosecuted as a felony. We were trained to look for external signs of injury, and many prosecutors believed you needed a cooperative victim to prove a choking case, including testifying about her injuries. But choking victims often said they were fine and rarely requested paramedics or sought medical attention. They often would not remember the details of the assault. This seemed like it made the case even weaker. The usually said they were "fine" or "okay," and it caused us to think they were fine too. But we were wrong.

The deaths of Casondra and Tamara triggered profound changes in San Diego. After their deaths, we needed answers. The San Diego City Attorney's Office immediately launched one of the first and largest studies of nonfatal strangulation cases by conducting a careful analysis of 300 cases submitted for prosecution by the San Diego Police Department. The results of that study proved that most victims of strangulation did not present with visible injuries; however, there were subtle, identifiable signs and symptoms that could be documented by well-trained professionals. With the support of adequate laws, protocols, and leadership, the cases could be handled much more effectively.

Today, it is understood unequivocally that strangulation is one of the most lethal forms of domestic violence. Victims may have no visible injuries, but because of underlying brain damage or other internal injuries caused by the lack of oxygen during the strangulation assault, they may sustain serious internal injuries. They may die days or weeks after the attack because of a stroke, suffer a traumatic brain injury, or experience other long-term physical and mental health consequences. Nonfatal strangulation and suffocation assaults are also more prevalent than we realized years ago, with prevalence rates between 68% to 80% for high-risk domestic violence victims.

When a victim is strangled, she is at the edge of a homicide. Strangulation is one of the most accurate predictors for the subsequent homicide of victims of domestic violence. One study showed that the odds of becoming an attempted homicide victim increased by about seven fold for women who had been strangled by their partner. Women who are strangled multiple times are at even higher risk.

Strangulation has also been linked to officer-involved critical incidents, officers killed in the line of duty in intentional homicides, and mass murders. The research clearly shows the need for all professionals to improve their screening and documentation of strangulation cases. When working with a strangled victim, advocates, detectives, nurses, and prosecutors must all make good use of risk assessment tools, encourage medical treatment, create personalized safety plans, and offer long-term follow-up. Today, we know far more about strangulation than we knew in 1995.

It is now our responsibility to do something about it. We cannot continue to hear the words "He choked me," and treat this assault like we would a slap or a punch. The difference between life and death in most strangulation assaults is only a matter of seconds. We have an opportunity to stop stranglers before they kill, but we must seize that opportunity.

We must learn to more effectively investigate and prosecute near-fatal and nonfatal strangulation assaults as felony offenses even with little or no external visible injury. We must pursue these complicated cases even without victim participation or testimony whenever possible. We must work in Family Justice Centers and multidisciplinary teams to effectively hold offenders accountable and provide the victim the medical advocacy and support survivors need. Every time we hold a strangler accountable, we reduce the likelihood of a homicide, and we send a message to men who strangle and suffocate women: We see you, and we will not let you commit life-threatening and often brain-damaging assaults with impunity.

Thankfully, 25 years later, San Diego has figured it out and is leading the way in felony strangulation prosecutions with a 96% conviction rate thanks to a county-wide protocol that includes strong on-scene and follow-up investigation; domestic violence and strangulation medical assessments by forensic nurses; expert testimony; and specially trained dispatchers, paramedics, prosecutors, and probation officers.

The authors of the *Domestic Violence and Nonfatal Strangulation Assessment,* Diana Faugno, Valerie Sievers, Michelle Shores, Patricia Speck, and William Smock, are some of the leading experts in the field of nonfatal strangulation. They all serve as advisors, mentors, faculty, and friends of our internationally recognized Training Institute on Strangulation Prevention, which we officially launched in 2011.

There is a growing body of peer-reviewed articles published in medical, social science, and legal journals about all aspects of nonfatal strangulation cases, including signs and symptoms, internal injuries, and delayed or long-term consequences. Education and training for professionals who deal with strangulation patients has dramatically improved. Advancements in the field now allow for more accurate evaluations of findings, or lack of findings, in strangulation patients.

Domestic Violence and Nonfatal Strangulation Assessment for Health Care Providers and First Responders is one of those valuable tools available to all disciplines. This workbook will allow both new and experienced practitioners the opportunity to build skills in identification, documentation, assessment, and treatment of strangulation assaults. We strongly recommend this material as a valuable addition to every basic training curriculum and to every professional handling nonfatal strangulation cases, but especially to medical and emergency medical services professionals. Had this workbook been available back in 1995, we are confident both Casondra and Tamara would be alive today because police officers and prosecutors would have known how to investigate and prosecute these cases, victims would have been adequately assessed and treated by medical professionals, and offenders would have been held accountable for their crimes.

Thank you, Diana, Valerie, Michelle, Patricia, and Bill for creating this powerful, effective tool for the field. It will be a lifesaver and a hope-giver.

Gael Strack, Esq.
CEO & Co-Founder
Training Institute on Strangulation Prevention
A Project of Alliance for HOPE International

Casey Gwinn, Esq.
President & Co-Founder
Training Institute on Strangulation Prevention
A Project of Alliance for HOPE International

Preface

In the last 35 years, the published literature has evolved to address violence against women with a variety of titles and terms including: battered wives, battered women syndrome, domestic violence, and perhaps the more widely used reference, intimate partner violence. According to the Centers for Disease Control and Prevention,[1] the overall definition for intimate partner violence includes physical violence, sexual violence, stalking, and psychological aggression (including coercive tactics) by a current or former intimate partner (ie, spouse, boyfriend/girlfriend, dating partner, or ongoing sexual partner). Physical violence is defined as the intentional use of physical force with the potential for causing death, disability, injury, or harm. Physical violence includes, but is not limited to scratching, pushing, shoving, throwing, grabbing, biting, ***choking***, shaking, hair-pulling, slapping, punching, hitting, burning, use of a weapon (gun, knife, or other object), and use of restraints or one's body, size, or strength against another person.[1]

Currently, intimate partner violence is widely recognized as a public health issue. In the past 17 years, recognition of nonfatal strangulation within the context of intimate partner violence has garnered a lot of attention, largely in response to a seminal study that has helped to shape law enforcement responses, health care practice, legislation, and research. The study of 300 victims of nonfatal strangulation conducted in San Diego identified that most victims reporting strangulation lacked physical, observable injuries; 50% of the victims had no visible injuries, and 35% of the victims had injuries too minor to photograph. Additionally, many of these victims did not present or were not referred to an emergency department for evaluation.[2] The impact of early studies has increased awareness that nonfatal strangulation is more serious than has previously been considered and may have been the impetus for legislation and developing best practices for clinical evaluation and treatment recommendations.[3]

While much of the published literature on nonfatal strangulation has identified that women of child-bearing age are most often the victims of this form of trauma, other vulnerable populations cannot be overlooked by health care and law enforcement professionals, including children and the elderly. Professionals providing a response to these vulnerable groups should also consider that these patients may have been injured by forms of smothering or suffocation.

In 44 states and the District of Columbia, health care professionals are obligated to report elder abuse to adult protective services.[4] Elder abuse is defined as an intentional act, or failure to act, by a caregiver or another person in a relationship involving an expectation of trust that causes or creates a risk of harm to an older adult. (An older adult is defined as someone age 60 or older.) Forms of elder abuse are recognized to include physical abuse, sexual abuse or abusive sexual contact, emotional or psychological abuse, neglect, and financial abuse or exploitation.[5]

The incidence of strangulation and subtle nature of associated symptoms and injury are not easily distinguished if health care professionals, law enforcement, and pre-hospital personnel are not exposed to education and training about identification, screen-

1. *Breiding MJ, Basile KC, Smith SG, Black MC, Mahendra RR. Intimate Partner Violence Surveillance: Uniform Definitions and Recommended Data Elements, Version 2.0. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2015.*
2. *Strack GB, McClane, GE, Hawley, D. A review of 300 attempted strangulation cases part I: criminal legal issues.* J Emerg Med. *2001;21(3):303-309.*
3. *McClane, GE, Strack, GB, Hawley, D. A review of 300 attempted strangulation cases part II: clinical evaluation of the surviving victim.* J Emerg Med. *2001;21(3):311-315.*
4. *Daly JM, Jogerst GJ. Statute definitions of elder abuse.* J Elder Abuse Negl. *2003;13(4):39-57.*
5. *Hall, JE, Karch, DL, Crosby, AE. Elder Abuse Surveillance: Uniform Definitions and Recommended Core Data Elements for Use in Elder Abuse Surveillance, Version 1.0. Atlanta (GA): National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 2016.*

ing, assessment, and treatment. In addition, forensic nurses have a pivotal role in not only evaluating patients seen after strangulation, but providing in depth evidentiary examinations and accurate medical-forensic documentation. A variety of case studies, best practice recommendations, and tools to support evaluation and documentation are reviewed in the following chapters.

Diana K. Faugno, MSN, RN, CPN, SANE-A, SANE-P, FAAFS, DF-IAFN, DF-AFN
Valerie Sievers, MSN, RN, CNS, SANE-A, SANE-P, DF-AFN
Michelle Shores, MSN, RN, MBA-HC, CEN, SANE-A, SANE-P
Bill Smock, MD
Patricia M. Speck, DNSc, CRNP, FNP-BC, DF-IAFN, FAAFS, DF-AFN, FAAN

Reviews

Domestic Violence and Nonfatal Strangulation Assessment *is a valuable tool to educate first responders, SAFE/SANE nurses, and medical providers on how to assess, document, and treat victims of nonfatal strangulation. It starts by standardizing basic definitions and moves on to discuss the anatomy, signs and symptoms, and injuries seen in victims of strangulation. Information on the various imaging modalities and what each specific technique visualizes is provided. The multiple case studies, along with the resources in the appendices and the recommended readings, serve to standardize our documentation. This book provides invaluable, evidence-based information to both novice providers and experienced providers alike.*

Rosalyn Berkowitz, BSN, RN, FNE A/P
Forensic Nurse Examiner
SAFE and Domestic Violence Program
Greater Baltimore Medical Center
Towson, Maryland

Strangulation victims most often do not have signs or symptoms of strangulation. *The* Domestic Violence and Nonfatal Strangulation Assessment *is very important to implement in every health care provider's practice. This guide does a great job presenting case studies from everyday practice and gives you the knowledge you will need to assess the strangulation victim while using the best evidence-based practices and tools. Photos are used to discuss the anatomic location of common injuries and proper documentation of those injuries. Safety and proper discharge planning are essential in these patients and are discussed in the guide with great resource recommendations for the victims. Overall, this an excellent guide from a very knowledgeable group of expert authors.*

Natalie Calow, MSN, RN, CEN
Forensic Nurse
IUH Methodist Hospital
Indianapolis, Indiana

The case studies used in this comprehensive guide can be extremely helpful for newer forensic nurses or for those working in rural areas that may not have seen the volume of forensic examinations a busier metropolitan area has. The pictures and activities at the end of each chapter will help prepare these nurses for the injuries they might see during a strangulation examination.

Kristin Hall, BSN, RN, CEN
Clinical Director
Family Justice Center SANE

The Domestic Violence and Nonfatal Strangulation Assessment for Health Care Providers and First Responders *will be a tremendous asset for those that encounter a victim of strangulation. Often, first responders may not be trained on the signs and symptoms of a strangulation assault and may overlook some important information and assessments. The use of case studies and imaging in this guidebook will assist first responders and health care providers in recognizing some of the physical signs that may be present, but also the verbal identifiers the victim may report. This guide will provide a quick and easily accessible reference to understand the uniqueness of this form of violence and provide the necessary steps to provide the best practice initial care and compassion these individuals will need upon first contact with health care or law enforcement.*

Lori Combs, BS, RN, LNC
Forensic Nurse Expert/Forensic Consultant
Critical Analysis Consulting RN
Fort Myers/Cape Coral, Florida

Domestic Violence and Nonfatal Strangulation Assessment for Health Care Providers and First Responders *is a collection of case studies that presents relevant discussions and activities to enhance the user's knowledge base surrounding nonfatal strangulation. Leaders in the field have compiled pertinent case studies, including photographs, which promote discussion of the challenges surrounding nonfatal strangulation cases and provide best practice recommendations for these cases. We keep this workbook in our "library." It is used as a teaching aid and reference for SANEs.*

Each case study provides an anatomic skill review that reinforces areas of interest or concern when caring for victims of nonfatal strangulation. An injury identification activity for each case study provides visual cues for photodocumentation and can bolster the provider's documentation skills by incorporating key descriptive words to use when describing findings. Case studies also provide activities to enhance the user's assessment and evidence collection skills. Activities are designed to encourage the user to outline appropriate care and referrals for each patient.

Jennifer Knowlton, RN, SANE-A
Chief Executive Officer
Chesapeake Forensic Specialists
Chesapeake, Virginia

This workbook lays the foundation of fundamental concepts necessary for evidence-based clinical and medical-forensic assessment and care of the strangulation patient. It addresses key information that underlies the background and dynamics of domestic violence and applies it toward a holistic care approach. Each case study looks at the unique medical and psychosocial implications. A literature-based discussion is provided, which drives clinical decision making, safety planning, and mental and behavioral health guidance. Health care providers can rely on this resource to enhance their care plans to meet the comprehensive set of needs of the strangulation patient.

Amber O'Malley, MSN, RN,
SANE-A, SANE-P
Forensic Nurse Examiner
NWA Forensic Nurses
Bentonville, Arkansas

The Domestic Violence and Nonfatal Strangulation Assessment *is an outstanding guide for those who provide care to victims of domestic and intimate partner violence affected by strangulation. This workbook is all-encompassing and addresses the physical, mental, emotional, social, and legal challenges victims and providers experience when providing care to those impacted by violence. It highlights evidence-based practice screening tools, diagnostic testing, assessment pearls, evidence collection, and resources, enhancing a provider's ability to deliver safe, quality, comprehensive medical-forensic treatment and care. This workbook is not only a must-read for forensic nurses, but for all health care providers.*

Jennifer Barrett, MSN, RN, CNS,
SANE-A, SANE-P
Sexual Assault Nurse Examiner,
Forensic Clinical Nurse Specialist
Denver Health Medical Center
Denver, Colorado

Contents in Brief

Contents in Detail

Section I

Definitions and Anatomic Review

Objectives

After reviewing the information presented in this section, the participant will be able to:

1. *Identify anatomic structures of the neck.*
2. *Define strangulation and the language associated with strangulation.*
3. *Describe the possible signs and symptoms experienced during and after strangulation.*
4. *Recognize the different presentations of complications occurring after strangulation.*
5. *Critically analyze recommended treatment pathways for the patient who experiences strangulation.*

Instructions

An anatomic diagram of the neck helps the participant correctly identify anatomic landmarks. Participants, refer to the anatomic diagram using definitions that follow for documentation of normal anatomy, identifying and describing injury, and noting other conditions or findings throughout *Domestic Violence and Nonfatal Strangulation Assessment*.

Additionally, the authors encourage participants to review the sections on presenting and developing symptoms, the potential for lethality, and recommended assessments and treatment as a supplement to the exercises in *Domestic Violence and Nonfatal Strangulation Assessment*. With the structured learning presented in this publication, students will familiarize themselves with signs and symptoms of strangulation and current treatment recommendations available to better identify and respond to cases of strangulation and properly document visible physical injuries.

Strangulation Language and Definitions

— ***Abrasion (scratches and scrapes):*** Superficial injuries to the skin that are limited to the epidermis and superficial dermis. Abrasions are normally caused by rubbing, sliding, or compressive forces against the skin.[1] A variety of traumatic abrasions may result from strangulation:

  — ***Chin abrasion:*** Incurred when, in an effort to protect the neck, the victim instinctively lowers the head and creates a compression sliding of the chin against whatever is applying external pressure to the neck.

  — ***Impression mark abrasion:*** Occurs when fingernails abrade the skin leaving a curvilinear (ie, semicircular) mark(s).

  — ***Ligature mark abrasions:*** Typically horizontal abrasions left on the neck that follow a predictable pattern. Distinguishable from suicidal hanging marks because the suicidal suspension ligature mark rises diagonally toward the ear. However, if pressure is applied with a ligature at an upward angle, the mark may be indistinguishable from suicidal hanging marks.

  — ***Scratch mark abrasion:*** Long, superficial abrasions that may be as wide or narrow as the fingernail itself. Scratch marks may be caused by the assailant or may be a defensive wound caused by the victim trying to remove the hand(s) or object applying pressure to their neck.

— ***Alternative light source (ALS light):*** A valuable tool that helps detect the presence of potential forensic evidence (eg, urine, sweat, semen, saliva, vaginal secretions, fibers) and other substances (eg, lotion, oils, powders) that would otherwise remain invisible to the naked eye. The area fluoresces, or glows, allowing samples to be collected; however, the collector cannot confirm the origin of the substance or fiber at the time of collection.[2,3]

— ***Anoxia:*** The absence of oxygen. During strangulation the brain suffers an anoxic injury when the blood supply is completely obstructed.

— ***Anoxic seizure:*** Tonic-clonic seizure activity lasting 2 to 8 seconds; results from an anoxic insult to the brain.[4]

— ***Asphyxia:*** A general term which indicating the body is deprived of oxygen. Causes of asphyxia are divided into 4 primary categories: suffocation, strangulation, mechanical asphyxia, and drowning.[5,6]

— ***Bruise or contusion:*** An area of hemorrhage of soft tissue caused by the rupture of blood vessels from blunt trauma. Contusions may be present in skin and internal organs. Some contusions express a pattern. A ***patterned injury*** is one which has a distinct pattern that may reproduce the characteristic of the object that caused the injury. The pattern may be caused by the impact of a weapon or other object on the body or by contact of the body with a pattered surface. Deep bruising is typically not visible externally. However, in physical injury, pain over an area without visible hemorrhage is presumed to be bruised/contused. Estimation of the age of contusions based on its color is imprecise and not supported by forensic science evidence.[5] However, there is staging of bruising and injury associated with healing stages—hemostasis, inflammation, proliferation, maturation—where bruise staging is possible during microscopic evaluation at autopsy.

  — ***Chin bruise:*** Occurs when, in an effort to protect the neck, the victim instinctively lowers the head causing the chin to press against the hands of the assailant, and the small vessels are torn and leak to form a bruise.

  — ***Clustering bruises:*** Usually located on the sides of the neck and on the jawline. May extend onto the chin and collar bones. Consistent with fingers in a hand-grasp strangulation.

  — ***Fingertip bruises:*** Circular, oval-shaped bruises consistent with the assailant's grasp.

  — ***Single bruise on neck:*** Most frequently caused by the assailant's thumb. Because the thumb generates more pressure than any other finger, this bruise is found more often than fingertip bruises in a hand-grasp strangulation.

— ***Buccal swabs:*** Cotton swabs used to collect cheek cells for DNA samples from the inside of the mouth.[2]

— ***Choking:*** Blockage of respiratory passage(s) with a foreign body. Choking results from materials such as food or other objects obstructing the airway and preventing the exchange of oxygen and carbon dioxide.

— ***Computed tomographic angiography or angiogram (CTA):*** CTA is used to evaluate the arterial vessels. CTA is the gold standard for the evaluation of the carotid and vertebral arteries for a strangulation-induced dissection. CTA is sensitive for bony, cartilaginous, and soft tissue trauma as well as vascular injuries (**Appendix 7**).

— ***Computed tomography (CT):*** CT is an imaging technique which is fast and provides a detailed view of the internal organs and structures. CT imaging will identify injuries to neck structures (bones and cartilage); however it fails to evaluate injuries to the vasculature of the neck. A CT is not recommended to determine if there are injuries to the carotid or vertebral arteries (**Appendix 7**).

Chapter 2

21-Year-Old Male Patient Assaulted by an Acquaintance

Case History

Ralph is a 21-year-old man who met with another man from a dating website. They met in the backyard of a house that was closed for the summer. The suspect became very aggressive and wanted to have sex immediately. Ralph said no, and the suspect grabbed Ralph and "choked" him with his forearm. Ralph lost consciousness and woke to the suspect on top of him penetrating his anus. A security camera had recorded all activities in the backyard, and a police investigation discovered all of the events recorded, happening as described by Ralph.

Ralph states, "I tried to move, but his forearm went on my neck again, and that's the last thing I remember. When I woke up, he was still on top of me. He choked me again, and I passed out. I woke up again, and I didn't move. He was still on top of me, and his penis was in my anus. I just let him finish. Then I got up, pulled my pants up, ran with my cell phone, and called 911. Paramedics brought me to the hospital. I can barely talk now."

Case Discussion

Myths, stereotypes, and unfounded beliefs about male sexuality—and in particular, male homosexuality—are widespread in legal and medical communities, as well as among agencies providing services to sexual assault victims. Men and boys who have been sexually assaulted or abused have many of the same feelings and reactions as other survivors of sexual assault, but they may also face additional challenges because of social attitudes and stereotypes about men and masculinity. Because of this, sexual assaults with male victims are underreported.[1,2] There is also a lack of appropriate services for male victims. Male victims of stranger assaults are more likely to experience assaults involving deadly weapons[3] and physical violence.[4]

Some common experiences shared by men who have been sexually assaulted include anxiety, depression, posttraumatic stress disorder, flashbacks, and eating disorders; feeling on-edge, being unable to relax, and having difficulty sleeping; and withdrawal from relationships and friendships and an increased sense of isolation. After a sexual assault, many men also have concerns or questions about sexual orientation, have feelings of being "less of a man," feel a sense of shame from not being able to stop the assault, and worry about disclosing for fear of judgement or disbelief.[5] When a man reports sexual assault to a heath care provider, it is important to listen, validate the patient's feelings, express concern, and provide appropriate treatment and resources.

Approximately 26% of gay men and 37% of bisexual men experience rape, physical violence, or stalking by an intimate partner, compared with 29% of heterosexual men.[4] This vulnerable population has increased risk and problems after sexual assault and violence.

In this case, strangulation was also involved. The guidelines for strangulation assessment should be followed to ensure a complete analysis of injury. Another concern for

Ralph is bias and discrimination by health care professionals, a major deterrent for gay men to seek health care. Sexual orientation determines who a person is attracted to, whether it is a man, a woman, both, or a combination of gender characteristics.[6] Ralph never told his parents nor his health care provider that he is gay. Young gay men without social acceptance are at risk for suicide. Social support is necessary for gay men to express their fears and concerns before revealing their sexual orientation.

Another potential risk is exposure to human immunodeficiency virus (HIV). Ralph was tested and provided postexposure prophylaxis (PEP). Instructions to follow up with his health care provider addressed some of Ralph's concerns about disclosure. A good rule of thumb is to routinely test men who have sex with men for HIV, assess HIV-negative patients for risk behaviors, and prescribe preexposure prophylaxis (PrEP) as needed.[7] Knowledgeable health care providers have a critical role in addressing all HIV prevention and intervention efforts for patients like Ralph.

In this case, after 2 years, the accused pled to an agreement that included incarceration, and Ralph did not have to testify in the courtroom.

Community-specific resources include the following:

— LGBT National Help Center Online Chat[8]

— The Human Rights Campaign[9]

As a caring society of professionals, health care providers should recognize the barriers faced by sexually nonconforming persons when choosing whether to speak out about a sexual assault. When men do choose to come forward, it is important that male survivors, like all survivors, are believed and supported by those around them and allowed to make trauma-informed, evidence-based decisions about what are necessary actions to take.[10]

References

1. Info & stats for journalists: statistics about sexual violence. National Sexual Violence Resource Center Web site. https://www.nsvrc.org/sites/default/files/2015-01/publications_nsvrc_factsheet_media-packet_statistics-about-sexual-violence_0.pdf. Accessed December 10, 2019.
2. Masho SW, Anderson L. Sexual assault in men: a population-based study of Virginia. *Violence Vict*. 2009;24(1):98-110.
3. Lipscomb GH, Muram D, Speck PM, Mercer BM. Male victims of sexual assault. *JAMA*. 1992;267(22):3064-3066.
4. Bullock CM, Beckson M. Male victims of sexual assault: phenomenology, psychology, physiology. *J Am Acad Psychiatry Law*. 2011;39(2):197-205.
5. Sexual assault of men and boys. Rape, Abuse, & Incest National Network Web site. https://www.rainn.org/articles/sexual-assault-men-and-boys. Accessed May 11, 2020.
6. Psychology Today. How many genders are there? Psychology Today Web site. https://www.psychologytoday.com/us/basics/gender. Accessed October 29, 2019.
7. Finlayson T, Cha S, Xia M, et al; National HIV Behavioral Surveillance Study Group. Changes in HIV preexposure prophylaxis awareness and use among men who have sex with men - 20 urban areas, 2014 and 2017. *MMWR Morb Mortal Wkly Rep*. 2019;68(27):597-603.
8. LGBT national online peer-support chat. LGBT National Help Center Web site. https://www.glbthotline.org/chat.html. Accessed October 29, 2019.
9. Sexual assault and the LGBTQ community. Human Rights Campaign Web site. https://www.hrc.org/resources/sexual-assault-and-the-lgbt-community. Accessed October 29, 2019.
10. Student Life Sexual Assault Prevention and Awareness Center. Male survivors of sexual assault. University of Michigan Web site. https://sapac.umich.edu/article/53. Accessed October 29, 2019.

Chapter 3

66-Year-Old Female Patient Assaulted by Her Son

Case History

Mary is a 66-year-old woman who lives at home with her 69-year-old husband and 42-year-old son. She reports to the nurse that she was in the kitchen when her son came home and started to yell at her and hit her. She says he was mad "because he ran out of money again." The suspect grabbed the patient's neck from the front with one hand and threw her to the floor. "I don't remember falling down, but I remember feeling that his hand never came off my neck," Mary says. She remembers being on the ground on her back with the suspect leaning over her, and his left hand was still on her neck while he held a gun to her head with his right hand. "It was hard to remember exactly what he was saying, but he told me to give him money or he was gonna shoot me." The patient says her husband was in the bedroom but came into the kitchen when he heard the commotion. He started "a fight with our son," Mary says. She then describes that during the confrontation, the suspect physically assaulted his father with his fist and the gun. Mary says her son fled the residence through the front door when she called 911. Her husband was transported to the emergency department (ED), but she did not disclose her strangulation to law enforcement. Her injuries were not evaluated in the ED until the next day when they became visible to the nurses caring for her husband.

Clinical Pearl:
97% of strangulation victims are strangled manually with hands.

Mary is examined by a forensic nurse in the ED 24 hours after the assault. She states, "I think he only choked me once, because he pushed me to the floor by my neck. He was squeezing so hard. When he pulled out the gun, he squeezed even harder." Mary states, "He deals drugs, and he is just not right. He doesn't know what he's doing! He never hurt us like this before. It was like he was crazy."

The forensic nurse continues to ask Mary questions about her symptoms after the physical assault and strangulation. Mary reports that she lost her hearing during the event. She says she could not hear what her husband was saying when he and their son were fighting. Mary says, "It seemed quiet during that time even though I could see them yelling at each other." She says, "I got my hearing back once I heard my husband yell after my son hit him. It felt like slow motion, then it all went really fast." Other symptoms Mary discloses are weakness and numbness in bilateral upper extremities, chest pain, sore throat, coughing, difficulty swallowing, raspy voice, and nausea. Mary is disoriented to time and place when asked simple questions about her demographics and living situation. She is unsure if she lost consciousness but does not actually remember falling to the floor (**Appendix 14**). The patient is admitted to the hospital for 24-hour observation.

During the physical assessment, the patient does not disclose physical blows. She does have bruising to the right side of the upper lip area and the lateral and inferior corpus of the tongue that she cannot explain. She is asked about possibly clenching her jaw or biting her own tongue during strangulation and she states she does not remember because "it happened so fast."

The patient is seen for a follow-up examination 4 days (96 hours) later. The bruising on her tongue is almost completely gone after 4 days. However, she has new emerging and visible bruising on her right mandible area that was not seen during the evaluation 24 hours after the assault. She states that, although she was discharged from the hospital after 1 day, she continues to have neck pain, headaches, and dizziness.

Case Discussion

Forensic nurses and other forensic providers should follow best practices and a structured protocol to guide the evaluation and to capture all visible and painful injury. The nurse did a complete head-to-toe assessment, examining 360 degrees around the head and neck of the patient, and used traumagrams (**Figure 3-1**) to designate signs of the detectable injury. Using a standardized examination process decreases and minimizes errors in documentation. An example of standard strangulation examination protocols for both adults and pediatrics are on the Secure Digital Forensic Imaging website.[1]

The forensic nurse found injury on the patient's tongue. Injury in this area is easily missed if it is not part of the provider's standard oral cavity examination. It is important to note that the forensic nurse scheduled a follow-up examination with the patient. The next evaluation found additional injuries on the patient that were not present at the time of the initial examination. If a follow-up examination is not possible, tell the patient to contact law enforcement if new injuries arise or to self-photograph injury progression.

In the initial history, the patient did not remember or disclose everything that happened to her during the attack. That is expected, and there are several reasons for this (eg, trauma to the head and subsequent brain injury, anoxic injury, some memories take time to fall into place after a traumatic experience). In this instance, the suspect grabbed the patient's neck with one hand and pushed her to the floor, all while clasping her throat. The patient does not remember falling, suggesting she experienced an anoxic injury.

Figure 3-1. *Traumagrams for documentation of detectable injury in nonfatal strangulation.*

Traumagrams for Documentation of Injury in Nonfatal Strangulation

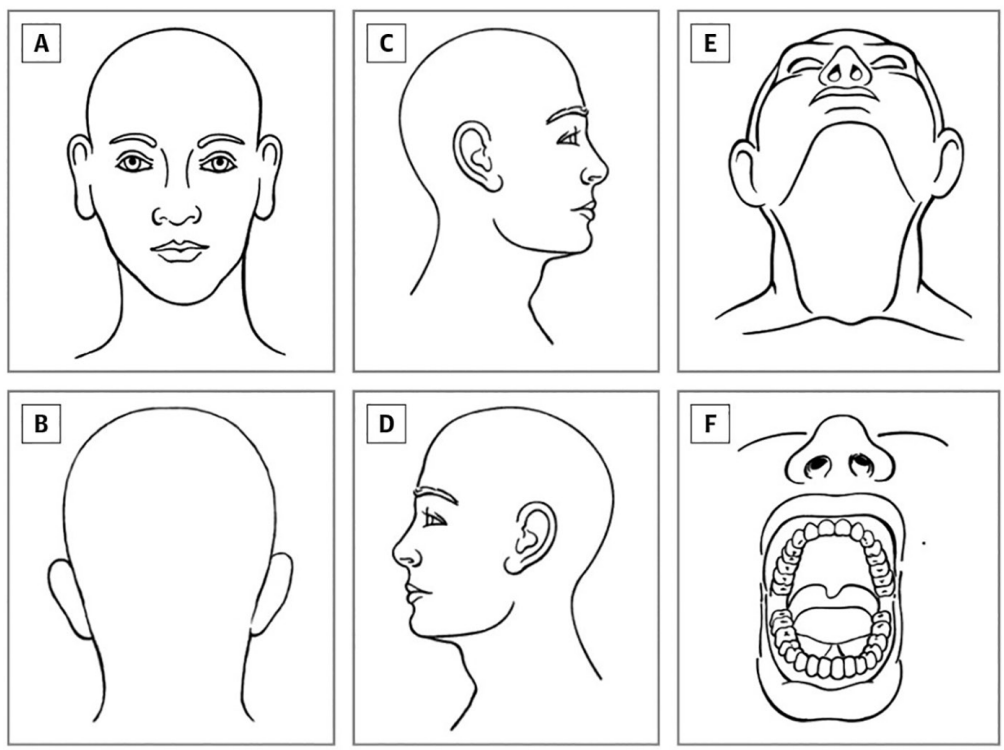


Figure 3-1

Chapter 4

17-Year-Old Female Patient Assaulted by a Nonintimate Acquaintance Stalker

Case History

Linda is a 17-year-old girl with a history of foster care and no family ties. She had been in foster care since age 6 when her parents died in an accident. She aged out of foster care, and she and her 1-year-old daughter currently live with friends. Linda usually works the evening shift with her friend José, when there are only a few employees scattered throughout the building. José had been asking Linda to go out with him, and she told him she was not interested in "that kind of relationship."

She says that José sexually assaulted her when they were together at work. She states, "He got really angry after looking at my Facebook account. He told me he was going to hit me for every guy he saw on my page. He repeatedly hit and slapped me on the left side of my face, back, thighs, and tummy. He tied my hands up with his tie and just punched and kicked my body all over. He had me in a choke hold when he dragged me into the copy room." She reports being "crumpled on the floor" and "crying" asking for help. She says, "No one came," and "that's where he forced me to have sex with him." Someone from the office called 911.

> ***Clinical Pearl:***
> *35% of strangulation victims are strangled as well as sexually assaulted/abused, and 9% of victims are also pregnant.*

Emergency medical responders arrived with law enforcement, and after a rapid triage process, attached her to a backboard, applied a neck brace, and inserted an intravenous (IV) line. Her clothing was cut off and bagged, and Linda was bleeding from the genital area. They transported Linda to the emergency department where the trauma team was waiting. Police remained on the scene. Linda was crying and sobbing through her oxygen mask. She does not have health insurance and states, "I don't have any money and now I won't have a job because of this. What do you want me to do?" The forensic nurse is called and responds to the hospital to see Linda. After Linda is stabilized, the forensic examination is started with Linda's consent. An advocate is present for the examination. The patient examination is conducted 6 hours after the assault. Linda tells the nurse that José had sex with her. The nurse confirms "sex" was penile-vaginal penetration.

Case Discussion

A full battery of laboratory testing and imaging is completed, reflecting the assault history, and the patient is released to the forensic nurse for the medical forensic evaluation. Often, when gathering the history of an assault, the forensic nurse may not suspect strangulation, and therefore, will not ask about it. It is recommended that communication with the patient includes common, understandable vocabulary. Even if the health care provider uses the word ***choking***, the patient may not see that as strangulation. The recommendation from San Diego County Forensic Nurses is to ask, "Did anything touch your neck or mouth?" Using open-ended, descriptive

language often triggers the patient's need to divulge a history of strangulation.[1] In this case, the patient does disclose strangulation in the form of a "choke hold" and being dragged. If not evaluated during the acute workup following triage, the recommendation for testing is computed tomographic (CT) angiogram of the carotid/vertebral arteries (the gold standard for evaluation of vessels and bony/cartilaginous structures, although it is less sensitive for soft tissue trauma) or CT of the neck with contrast (less sensitive than CT angiogram for vessels but good for bony/cartilaginous structures). In addition, CT angiography combines a CT scan with the injection of dye through an IV line that starts in the arm or hand. The contrast dye technique creates detailed images of the blood vessels in the head and neck, discovering minor dissections. It is important that the nurse does not rub the carotid artery or palpate this area in a nonfatal strangulation case, because that pressure could dislodge a clot. The poststrangulation evaluation information will need to be given to the patient in order to receive consent authorization for this type of examination. The goals of this procedure also need to be explained to the patient, which are to evaluate the vertebral and carotid arteries as well as the soft tissue neck structure and head injury.

When presented with the information about further evaluation, Linda stated she was worried because she does not have insurance. Linda also stated she did not have anywhere for her or her child to go or any friends who would help her now. She also said that she was very scared. The social worker or case manager is notified to discuss her minor status. Without a job and housing, the court should collaborate with Linda to create a safety plan to protect her. Because Linda's assault will be filed as a crime, victim witness services may be helpful. She may qualify for federal or state assistance as well. The social worker assists Linda through the hospital process before discharge. When discharged, the community advocate helps Linda with the child protective services' (CPS) safety plan and court's protection order and helps her find support from someone who can stay with her and monitor her for a few days.[2,3] The advocate notifies a local shelter that could provide long-term services to assist Linda, and she is taken to the shelter after discharge. Follow-up with a medical provider was arranged and approved by CPS with a local clinic. CPS also brought her child to the shelter.

In summary, Linda's case is complex, requiring a number of government, non-governmental, and volunteer organizations' collaborative efforts to support Linda throughout her recovery.

References

1. County of San Diego Health and Human Services Agency. Intimate partner violence in San Diego County. San Diego County Web site. https://www.sandiegocounty.gov/content/dam/sdc/hhsa/programs/phs/cahan/communications_documents/02-12-19.pdf. Published February 12, 2019. Accessed December 4, 2019.

2. Crawford-Jakubiak JE, Alderman EM, Leventhal JM; Committee on Child Abuse and Neglect, Committee on Adolescence. Care of the adolescent after an acute sexual assault. *Pediatrics*. 2017;139(3):e20164243.

3. Mollen CJ, Goyal M, Lavelle J, Scribano P. Evaluation and treatment of the adolescent sexual assault patient. *Adolesc Med State Art Rev*. 2015;26(3):647-657.

Chapter 5

26-Year-Old Female Patient Assaulted by a Former Intimate Partner

Case History

Maria is a 26-year-old woman who is a service maid at a resort hotel. She was in the shower getting ready for work when Tom, her estranged partner and the father of her son, entered the home through the kitchen window. Tom approached her in the shower, grabbed her by the neck, and pulled her out of the shower. At first, she did not recognize him. Once she realized it was her ex-partner, she protested loudly, "You shouldn't do this! Stop!" He squeezed down harder on her neck, and she could not yell anymore. Maria reports that Tom directed her to have sex with him, and she complied. Their son was sleeping upstairs, but he woke up. When Tom realized their child was coming down the stairs, he released Maria's neck and punched her in the mouth. Then Tom got off Maria, and she ran to the bathroom to finish dressing; she continued pleading for him to leave. Tom zipped his pants, and before leaving the home, threatened to kill Maria and their son if she told anyone about the assault.

Maria drove their son to Tom's mother's house so she could watch the child. Without disclosing the crime, Maria told Tom's mother that she was going to work. Instead of reporting for work, Maria called the police, who brought her to the hospital. She is cleared under the Emergency Medical Treatment and Labor Act and meets with the forensic nurse for a medical forensic examination. During the medical forensic history, Maria discloses the strangulation again. She also talks about how Tom verbally abuses her and uses her words against her.

During examination, Maria says, "His hands are so large … and he only needs one hand on my neck to grab hold, and I can't breathe. He's done this so many times before… I give in because I know it will only get worse if I don't do what he wants." When asked how she explains the bruising on her face and neck, she says, "I usually tell the people I work with that they are suck marks. I don't discuss what happens to me when I am with him. I need the work." There are no other injuries noted on the head-to-toe domestic violence and nonfatal strangulation examination. Swabs are collected from the neck and fingernails, with reference DNA samples from Maria. All samples are submitted to the police department with the forensic report.

Clinical Pearl:
Women who suffer one nonfatal strangulation by an intimate partner are 750% more likely to be killed with a gun by the same person.

Case Discussion

Maria's case was difficult because she remained disengaged throughout the history and said she wanted to go back to work. Weighing her options, she verbalized to the forensic nurse that she was very worried about her job and who she could count on to take care of her child if the police report became public. When asked about her relationship with her son's grandmother, Maria said that the grandmother was their babysitter and often made excuses for Tom's behavior, accusing Maria of not being a good mother or partner. When asked if her son was safe with the grandmother, Maria assured the forensic nurse that the grandmother loved him and he loved her.

The child's presence during domestic violence is considered child endangerment, so all medical providers involved with this case are mandatory reporters of the crime. In some states, upon conviction, penalties for domestic violence are increased when it is substantiated that children were present during the event.

A number of factors in intimate partner violence are identified with an increased risk of morbidity and mortality, and victims often do not understand their increased risk. For example, when intimate partners are excessively jealous and constantly want to know the partner's location, they use rage as a weapon and are lethally dangerous. A jealous batterer often tries to control their partner's behavior and often projects that the partner is having affairs. These abusers often stalk their partners when they leave the relationship or move out of the house.[1] In this case, the abuser came in through an open window to gain access to his ex-partner. An abuser's history, such as Tom's, of using strangulation during an assault increases lethality risk with each subsequent assault.

After the physical assessment, the forensic nurse used the Danger Assessment with Maria to help her begin to process her risk of lethality. It was explained that her partner's increasing number of episodes of strangulation and rapes predict an increasing risk of death. Maria was given a calendar and asked to mark the approximate dates during the past year when she was beaten, raped, or strangled by Tom. She was instructed to write on each of those dates how bad the incident was according to the following scale[2]:

1. Slapping, pushing; no injuries and/or lasting pain

2. Punching, kicking; bruises, cuts, and/or lasting pain

3. "Beating up;" severe contusions, burns, broken bones

4. Threat to use weapon; head injury, internal injury, permanent injury

5. Use of weapon; wounds from weapon

During the medical forensic examination, the forensic nurse noted that Maria's demeanor was flat, and she played games on her phone. She never engaged with the calendar activity, even with support from the forensic nurse. She remained disengaged throughout the entire evaluation. The forensic nurse and health care provider discussed safety planning with Maria. She had no support present for the examination, and no advocate was available. The forensic nurse, providing patient-centered and trauma-informed care, supported Maria's decision to leave when she became impatient and asked if she could go to work, opening the door for her to seek services again. Maria did not take the calendar or the lethality scale with her when she left. She did not follow up with the agency or return for follow-up care.

Later, Maria called the district attorney's office and said, "everything's fine," and she would not cooperate with pressing charges against her child's father. A criminal case was not pursued, and the case was dropped. It is not uncommon for women in domestic violence situations to avoid all legal actions, including pressing charges. Research reveals that victims of domestic violence often provide a number of reasons for their choices, including a lack of money to afford leaving their abuser and fear of homelessness. Other reasons include individual religious beliefs and marriage vows. Often, the offender provides financial support and threatens withdrawal of support when arrested and in jail. Additionally, offenders will minimize the event (eg, "You're exaggerating what happened;" "It wasn't that bad;" "I wouldn't do that to you") (**Appendix 17**) and reinforce their love for the victim while promising that "it won't happen again."

During the examination, Maria also talked about some of the emotional abuse she experienced from Tom. She said Tom would tell her, "You're a rotten mother. You're a

whore." This caused Maria to doubt that she was a good mother, and she verbalized fears that her son would be taken away from her. Reframing and twisting words or experiences is called gaslighting[3] and is a common method used to emotionally break down and abuse intimate partners. Gaslighting is a very effective form of emotional abuse, because once an abusive partner has broken down the victim's ability to trust their own perspective, the individual may be more vulnerable to the effects of abuse, making it more difficult to leave the abusive relationship. Gaslighting also increases isolation from family and friends.

References

1. Stop Violence Against Women. Lethality assessments. University of Minnesota Human Rights Library Web site. http://hrlibrary.umn.edu/svaw/domestic/link/lethality.htm. Accessed October 29, 2019.
2. Campbell JC. Danger assessment. National Center on Domestic and Sexual Violence Web site. http://www.ncdsv.org/images/DANGERASSESSMENT.pdf. Accessed October 29, 2019.
3. A deeper look into gaslighting. National Domestic Violence Hotline Web site. https://www.thehotline.org/2019/11/22/a-deeper-look-into-gaslighting/. Published November 22, 2019. Accessed January 2, 2020.

Anatomic Skills 5-1

Refer to **Figure 5-1**. Using the letters that correspond to the structure in the photograph, label the anatomic locations.

Arrow A. _____

Arrow B. _____

Arrow C. _____

Arrow D. _____

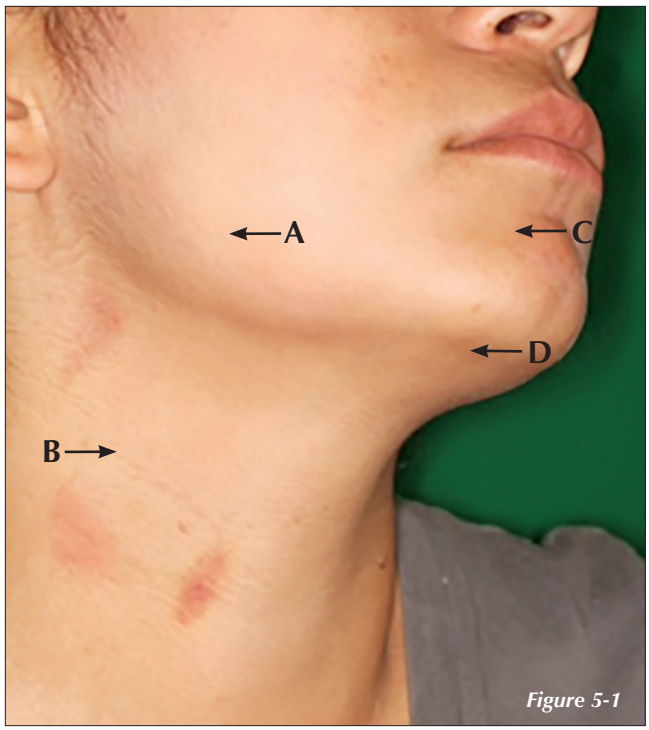


Figure 5-1

Activities

Activity 5-1. Injury Identification

Refer to **Figure 5-2**. Identify any injuries in respect to their anatomic location. Write objective descriptions when documenting findings.

Arrow E. _____

Arrow F. _____

Arrow G. _____

Arrow H. _____

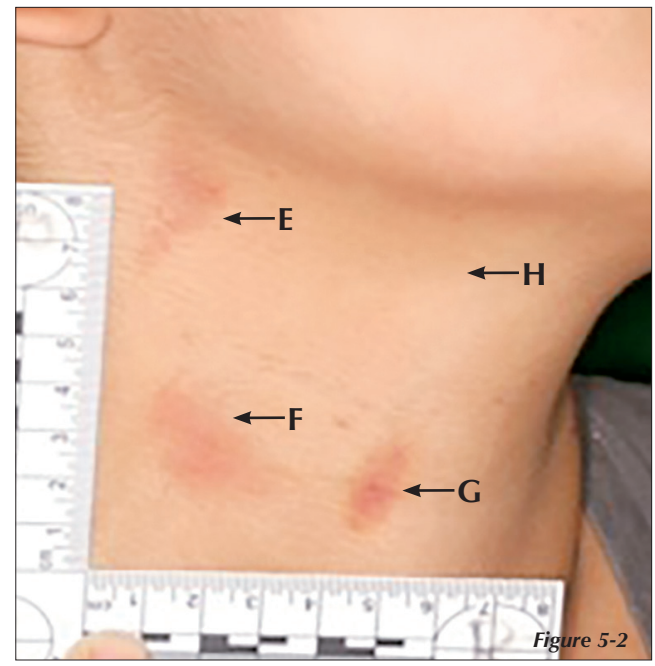


Figure 5-2

Chapter 6

15-year-old Female Patient Assaulted by a Stranger

Case History

Latisha is a 15-year-old African immigrant who was walking home from a friend's house. She remembers being grabbed from behind and that a rope was put around her neck. The next thing she remembers is waking up naked and alone in an alley. She locates her clothes and walks to a store nearby. The shop owner calls the police and fire department. Emergency medical services bring Latisha to the emergency department for a medical forensic evaluation with the on-call forensic nurse. The police accompany her to the hospital and tell the forensic nurse about the circumstances of Latisha's experience. The officer tells the forensic nurse that Latisha was reported missing last night when she did not return home, and her mother was on the way to the hospital to support her daughter. Latisha expresses worry about how her mother will react. She states, "My mom gets angry and yells when I do not do what she wants." The advocate reassures Latisha that she will help both Latisha and her mother.

Even without a known history of sexual assault, Latisha agrees to a medical forensic examination that includes a total body inspection for injury, including inspection of her anogenital structures for possible sexual assault. On a scale of 1 to 10, Latisha says her neck pain is a 7 out of 10. She also says she has a sore throat and notes that her voice is hoarse, which is audible to the forensic nurse. The nurse also notices a large bruise on Latisha's left arm and a laceration on her forehead.

Clinical Pearls:
During a strangulation event, loss of consciousness can occur within 5 to 10 seconds, and death can occur within minutes.

Case Discussion

Latisha lost consciousness quickly. Because Latisha is 15 years old, consider an interview with a trained forensic interviewer several days after the assault. The delay with an interview allows time to process the event. For some patients, sensory memory returns. This is important in this case in order for the investigation to move forward.

Latisha did not want her mother as a support during the medical forensic evaluation, but she wants her in the room afterwards. It is important in patient-centered and trauma-informed care to include family, if safety needs are met. Patients' healing is improved with support from family. Adults need to implement the discharge planning recommendations, and the forensic nurse needs to determine if the mother is supportive of her daughter. Sexually abused adolescents whose mothers believe them and offer comfort are less likely to suffer from anger and depression.[1] Follow-up counseling was also recommended in this case, but neither Latisha nor her mother followed up with the advocacy agency.

Neurologic signs and symptoms after strangulation may include vision changes, ringing in the ears, facial or eyelid drooping, one-sided weakness, incontinence, and miscarriage. Weeks to months after an assault, a victim may have problems sleeping and experience impairment in memory and concentration. Mental health problems

Chapter 7

24-Year-Old Female Patient Assaulted by a Former Intimate Partner

Case History

Sunny is a patient in her mid-20s. She met an old acquaintance while on vacation with her family in Mexico. She was having fun with her male friend, drinking and talking. They agreed to go back to his apartment, and while there, she reports, "He just snapped. I wasn't sure what was happening." She remembers that "all of a sudden he had his hands on my neck." She was sexually assaulted, and he dragged her by her neck into a kitchen. She describes multiple times when he put his hands on her neck, pressing down, and states that she lost consciousness twice. She describes that he strangled her with both hands from behind, and she was unable to speak and had blurry vision. She says that he looked "blank, out of control" (demeanor) and she says, "I believed I was going to die." She also says that she "thought I would be seeing my grandmother in heaven."

After admission to the emergency department, the initial workup, following best practices, includes a computed tomographic angiography (CTA), and she is observed overnight in the hospital. CTA is a noninvasive procedure that enhances certain anatomic views of vascular structures. It becomes invasive when a contrast medium is used.

Sunny returned home to the United States and reported the case the next day. The local jurisdiction is unable to charge the crime because it occurred in Mexico. There was no advocate available during the time of the examination, so the registered nurse (RN) called the hotline with Sunny to discuss safety planning. The safety planning is important because the suspect's location is unknown, and he knows where to find Sunny.

Clinical Pearls:
Strangulation is a gendered crime. Most stranglers are men (over 90%) and most victims are women.

Case Discussion

Sunny's case is complex because the crime occurred in another country, outside the jurisdiction of the United States. Once Sunny arrived back in the United States and made a police report to the local law enforcement, the officers created a ***courtesy case*** file. A courtesy case asks the local jurisdiction to dispatch a law enforcement representative to meet with the patient, take a statement, authorize a medical forensic examination, write a report, and pick up the sealed evidence. The case information and kit are then transported to the jurisdiction where the crime occurred. In Sunny's case, the courtesy case evidence and documentation transfer is between the local jurisdictions in the United States and Mexico for investigation and processing.

The documentation included descriptions of external findings, which were significant. The examiner noted a variety of visible injury patterns in a number of locations on Sunny's body. When focusing on the head and neck areas and the description of a strangulation history, the medical forensic examiner noted multiple bruises to the anterior neck in a linear horizontal pattern. There was also a cluster of vertical linear abrasions to the neck that started above the horizontal bruise and stopped at the horizontal bruise, measuring 4 to 8 cm in length, and diffuse petechiae above the area of the horizontal neck bruises, covering the exposed integument.

Chapter 8

65-Year-Old Female Patient Assaulted by a Former Intimate Partner

Case History

The following history was given to the forensic nurse approximately 6 hours after the assault. The patient arrives to the hospital's forensic center with a friend and describes multiple events of assault and the course of her emergency department (ED) care to the forensic nurse. The patient was seen in the ED immediately before the forensic evaluation. She was medically cleared and discharged to the offsite forensic center to be evaluated by the forensic nurse.

Linda is a 65-year-old woman who lives alone and "off the grid" without electricity. She grows most of her own food, describing her lifestyle as "living the simple life." Linda's best friend, Sam, lives about 100 miles away, but they talk weekly when Linda comes into town. Her only other mode of communication is a wired radio speaker in her truck. Sam did not hear from Linda in almost 3 weeks, so he began to worry and drove to Linda's home to check on her. Sam was concerned because of Tom, a man Linda dates from time to time. Linda mentioned to the forensic nurse during the history that Tom has "mental health issues," violent tendencies, and a history of assaulting her.

Clinical Pearl:
Strangulation is an ultimate form of power and control, because the batterer demonstrates his command over the victim's next breath.

The forensic nurse also takes a history from Sam, who requires a forensic examination for injury. Sam tells the forensic nurse that when he arrived at Linda's home, he found Linda naked in the back of her truck, dazed. Her clothes were on fire in the fire pit. When Sam exited his truck, Tom surprised Sam and charged at him. Sam punched Tom in the face and continued to fight until Tom fell against the truck; he was stunned and left the property. Sam went to comfort Linda, who had multiple facial and body injuries, so he called law enforcement. Sam reports that Linda agreed to be transferred from the scene to the hospital for an ED assessment, so he accompanied her.

Linda tells the forensic nurse that on arrival to the hospital, the triage nurse noted that Linda was anxious. The midlevel provider took the medical history in which Linda reported being strangled by Tom. Linda also revealed in her medical history at the hospital, and later to the forensic nurse, that 2 weeks before this assault Tom had attacked her, causing pain in her right wrist. She had contacted law enforcement, who responded to her home. Law enforcement officials tell the forensic nurse they attempted to serve Tom with a no-contact order but were unable to locate him. Linda declined medical care at the time of the previous assault; however, today she disclosed to the emergency medical staff and the forensic nurse that she continues to have pain in her right wrist. Linda reports that the ED nurse alerted the advanced practice provider (APP), and an x-ray examination of her wrist was ordered. Linda was diagnosed with a fracture in her right wrist, and the wrist was casted. The emergency APP completed Linda's medical screening examination as required under the Emergency Medical Treatment and Labor Act and determined she is medically stable.

Linda discloses to the forensic nurse that she was strangled with one hand on the front portion of her neck. Tom also put lipstick on her face and put his other hand

in her mouth to gag her. She additionally reports that Tom used her shirt to strangle her while he was sexually assaulting her and that she "wet herself." She denies a loss of consciousness but does describe "seeing spots." On a scale of 0 (no pain) to 10 (highest pain), she describes her throat pain as an 8. Linda states, "He's done this before, but he's sick…he has some mental health issues. He was just in the mental hospital and blamed me…said he was thinking I called his family to take him in. He is always really sorry when he does this…and he even buys me flowers. I need him around the land for help. I'm getting old, and he helps me chop firewood and keeps the yard up."

Linda reports that Tom has guns and threatened her with them, but says, "I don't believe he was really serious (about killing her)." She arrived in a different set of clothing because the clothes she wore during the assault were burned at the scene, but she is wearing the jewelry she had on. Linda scores 4 out of 5 on the Danger Assessment-5 (DA-5), which is administered by the forensic nurse (**Appendix 4**). A patient advocate is present and provides safety planning.

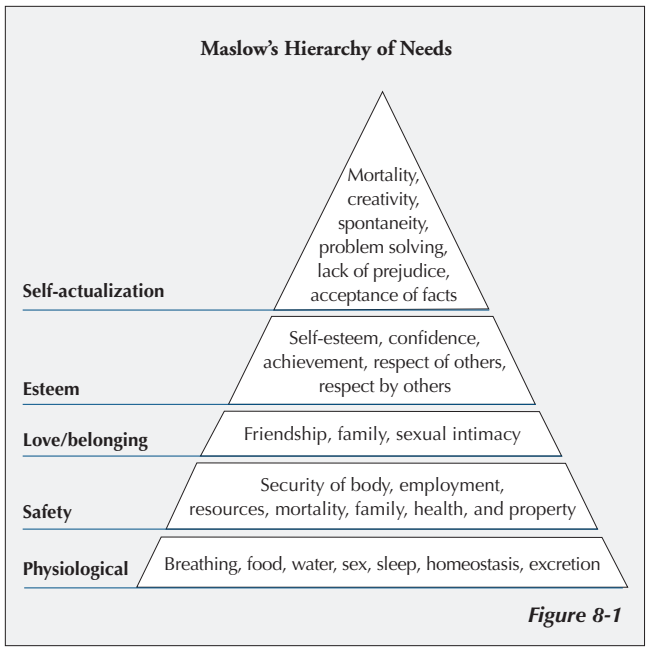
Linda reports to the forensic nurse that she declined a computed tomography angiography (CTA) because she says the ED AAP told her that she looked "okay." The forensic nurse discusses the need for observation, and when assessed during the follow-up recommendations, Sam agrees to stay with her for the next 24 hours. The forensic nurse has a standard procedure after an acute assault to have the patient observed after strangulation in case the patient comes into distress or experiences any increased neck swelling.

Sam expresses concern for Linda's health and wants her to stay in the ED overnight, but Linda declines. Advocacy services spend time with the patient to develop a safety plan, and law enforcement attempts to locate Tom but is unsuccessful. When asked by police, Linda declines to reveal Tom's location. She also decides against following up for another examination and declines any further advocacy services. Sam says he will continue to talk to Linda about the importance of her following up.

Case Discussion

It is not uncommon for patients who are experiencing violence to minimize their level of danger and rationalize continuing a relationship with the person who assaulted them. Many might ask *why?* Why would Linda continue to tolerate the abuse? An evaluation of battered women's experience with health care at the provider level revealed that "women perceived health care professionals to be disinterested or unsympathetic toward the needs of battered women, causing the women to feel ignored or trivialized."[1]

Figure 8-1. *Maslow's hierarchy of needs.*



In this case, Linda lives alone with minimal resources and has no family or friends other than Sam. She was asked if she needed additional resources or shelter. She did not disclose if her living situation was by choice or out of necessity related to financial challenges. During her history, she described that she had become dependent on Tom to help her around the house to perform tasks she was no longer able to complete. Necessities motivate people, and according to Maslow's hierarchy of needs (**Figure 8-1**), this includes physiologic (basic) needs. Physiologic needs include air, food, shelter, clothing, and sleep. Maslow explains that to move to up the hierarchy, one must have those needs met first. In Linda's situation, Tom helped chop firewood for her, and he tended to her garden. He also burned Linda's clothing, showing her that he had control over her shelter and clothing. In the history, Linda described 2 different strangulation events, showing an increased threat to her safety because of Tom's assertion of power over her physiologic need for oxygen.

As trauma-informed health care providers, it is important to understand that "why" questions could hinder the health care

Chapter 9

31-Year-Old Female Patient Assaulted by a Former Intimate Partner

Case History

Mary is a 31-year-old woman. Mary and Joe dated for several years. During their turbulent relationship, her 2 children went to live with their father in another state. About a month ago, Joe and Mary had a falling out, and Mary filed domestic violence charges after Joe assaulted her. The judge issued a no-contact court order. Since then, Mary has spent a lot of time with her mother. Mary and her mother were at a party together, and Joe showed up. He was drunk and started a fight with Mary and her mother. Witnesses said that during the assault, Joe grabbed and strangled Mary at least 5 different times with 1 hand, 2 hands, and his forearms. Mary screamed, "He said he's going to kill me now." Joe dragged Mary into the bathroom. The witnesses dialed 911, and Joe left. Witnesses shared their experience with the first responders (law enforcement officers and emergency management services [EMS] from the fire department). EMS transported Mary via ambulance to the emergency department (ED), accompanied by her mother, who was visibly shaken. Mary reports that Joe also sexually assaulted her during this strangulation event.

Clinical Pearl:
The cost of misreporting or misunderstanding strangulation crimes is incredibly high, because strangulation frequently foreshadows an escalating use of violence and homicidal intent.

The forensic nurse consulted with the advocate to provide services to Mary, which includes use of the sexual assault evidence collection kit. Mary tells the forensic nurse, "I was at a motel partying with my mom… (gasping air) when my ex-boyfriend, Joe, (gasping air) attacked me (gasping air). He's done this before, and (gasping air) I didn't say anything." She complains that she "lost consciousness," now has a raspy voice, and has continual "throat pain, headache, and neck pain." On inspection, Mary has scratch marks on her neck, and her fingernail is broken. She also has injuries on her lower forearms and hands.

The forensic nurse conducts a medical forensic interview, and Mary gives permission for the medical forensic examination to include sexual assault and strangulation assessment with photographs. She also gives permission for the advocate to be present during the examination. During the detailed history gathered by the forensic nurse, Mary discloses that she urinated on herself. She states, "I was mortified. I didn't know what to do. I don't have health insurance and didn't go to a doctor when he did this before. My mom insisted we come to the hospital… is she okay?" The patient will need specific follow-up instructions for both sexual assault and strangulation.[1]

Mary's mother is waiting in the lobby, complaining of chest pain. The triage nurse is considering a medical examination for Mary's mother. Support for Mary's mother is also necessary after medical clearance, because she is concerned that Joe will come to the house and harm both of them. An advocate or social worker assists the mother in safety planning and obtaining a restraining order.

Case Discussion

The Training Institute on Strangulation Prevention provides the following statistics[1]:

1. A woman who has suffered a nonfatal strangulation incident with her intimate partner is 750% more likely to be killed by the same perpetrator with a gun.[2,3]

2. In 2017, 44 police officers were shot and killed across the United States in the line of duty. Thirty-three of those officers were killed by a perpetrator with a public record history of at least 1 nonfatal strangulation incident.[4]
3. The majority of strangulation attacks do not leave any visible external injuries on the victim. This is important because people often do not know this and feel if there are no marks, there is no evidence. The injuries may also be subtle and therefore overlooked by the untrained eye. Skin tone can also affect how easily injuries are seen, so a methodic, head-to-toe examination is extremely important.[5]
4. Strangulation has been identified as one of the most lethal forms of domestic violence and sexual violence; unconsciousness may occur within seconds and death within minutes.
5. Strangulation is an ultimate form of power and control because the batterer demonstrates his command over the victim's next breath.[6]
6. When domestic violence perpetrators strangle their victims, not only is this a felonious assault or possibly an attempted murder, but too often it can lead to hypoxic brain injury and a subsequent fatal outcome.

By 2019, 48 states passed laws to prosecute strangulation and suffocation assaults as a felony. Additionally, the 2013 reauthorization of the Violence Against Women Act added strangulation and suffocation to federal law, and strangulation and suffocation were added to the Uniform Code of Military Justice in 2019.

Injury is progressive throughout the healing phases. Because of the nature of neck and brain injury (eg, closed/open spaces with continued bleeding), there is the potential for diminished function throughout the assessment. Therefore, assessment for potential serious sequelae is continuous in all patients, and when decline in function is recognized, an immediate referral to an advanced practice nurse, physician, or physician assistant is urgent and necessary.

Insurance coverage for medical sequelae is used first under states' compensation plans. Victim witness funds, while available, require the patient to apply, typically through the district attorney's office. In these cases, there is a community advocate who assists Mary. Inevitably, there are medical charges for the radiographs, computed tomographic angiography scan, and other screenings order by the advanced practice provider in the ED. If the patient does not have insurance to cover the medical charges, referrals to victim's compensation are a safety net and very important.[7]

References

1. Mengo C, Gidycz C. When abused women decide to seek help from a victims assistance program: their perceived needs and self-reported mental health symptoms. *Violence Vict*. 2019;34(4):613-634.
2. K Stavra. "All abusers are not equal": new IPV research reveals an indicator of deadly abuse. Training Institute on Strangulation Prevention Web site. https://www.strangulationtraininginstitute.com/all-abusers-are-not-equal-new-ipv-research-reveals-an-indicator-of-deadly-abuse/. Published January 8, 2020. Accessed May 21, 2020.
3. Glass N, Laughon K, Campbell J, et al. Non-fatal strangulation is an important risk factor for homicide in women. *J Emerg Med*. 2008;35(3):329-335.
4. Gwinn C, Strack G, Mack M. Law reform targets the crime of strangulation. *Domestic Violence Report*. 2014;19(6):81-100.
5. Rozzi HV, Riviello R. How to evaluate strangulation. American College of Emergency Physicians Web site. https://www.acepnow.com/article/how-to-evaluate-strangulation/. Published April 17, 2019. Accessed May 21, 2020.
6. Floyd B. Strangulation: a concerning type of domestic abuse. Training Institute on Strangulation Prevention Web site. https://www.strangulationtraininginstitute.com/strangulation-concerning-type-domestic-abuse/. Published October 6, 2016. Accessed May 21, 2020.
7. Daigle LE, Guastaferro WP, Azimi A. Victims' compensation as a tool of therapeutic justice: examining the physical and mental health needs of victim compensation applicants and the role of health in receiving compensation. *Violence Vict*. 2016;31(5):837-853.

Chapter 10

22-Year-Old Female Patient Assaulted by a Former Intimate Partner

Case History

Esther met David in college. He demanded all her time when she was not in class, and she loved the attention. Esther became more and more isolated from her friends, and by her senior year, she was only going to work and to school. David became increasingly possessive of her, looking at her bills and checking her mail. He insisted on knowing the password for her phone, and he regularly monitored her texts to her family. When Esther turned 22 years old, David talked her into moving in with him. The night she moved into his place, Esther arrived in the emergency department (ED) with law enforcement. Neighbors had called the police because the yelling and threats were so loud, they became afraid for Esther's safety. When law enforcement arrived, they saw that Esther had injuries, so David was arrested.

In the ED, Esther tells the triage nurse that her boyfriend, David, got home from work and immediately accused her, saying, "I heard you've been talking to Grant." Esther explains to the nurse that Grant is a "guy from school." Esther says, "I didn't know what he was talking about!" Esther then reports that when David heard the denial, he grabbed her phone and started looking through her texts. Esther says, "I was climbing on him trying to get my phone back and yelling at him. He saw other guys' names from my classes and work, and he got really, really mad and pushed me down on the couch. I was sitting up, and he was pushing my head back until I was hanging over the back of the couch, and then he 'choked' me." When asked to describe the choking, Esther states, "He had his 2 hands around my neck and was squeezing so hard. He looked like the devil. He was calling me a whore." Esther reports that she could not breathe and "was trying to talk, and it came out in squeaks without words." She states, "He was choking me for a long time, and then he started laughing." When he let go, Esther says she was trying to catch a breath. She says she was crying. She turned away from him on the couch and was holding her neck. She says David then "bear hugged" her from behind and "started biting me, and I started screaming." A neighbor rang the doorbell multiple times and yelled that he had called the cops. Esther says, "When David heard that, he got up, got my purse and jacket, opened the door, and told me to get out." Esther explains that he punched her in the face, pushed her out the door, and locked it behind her. When asked about her neck injuries and the bite marks, Esther admits that she told the patrol officer that they were from consensual sexual activity and says, "I didn't want to get David in trouble." The patrol officer noticed that she was coughing and holding her neck and encouraged her to be seen in the ED. She was brought by ambulance to the ED and discharged after being medically cleared. She left the hospital, declining the care of the forensic nurse.

Clinical Pearl:
The association between strangulation and other lethal criminal acts is clear, and many states increase penalties on conviction when strangulation is clearly documented in the medical record.

Esther's symptoms worsen 2 days later, and she calls the officer who brought her to be seen by the forensic nurse. When asked about the subsequent symptoms she experienced following the fight, Esther says that she is now coughing and "clearing her throat a lot." She says that her back and neck are "real sore" and her voice is "a little deeper than usual."

During the examination, the forensic nurse observes irregular bruising on both sides of Esther's neck, linear abrasions on her neck and chest, bruising and swelling of her lips, and self-inflicted bite marks on her tongue. Esther states she does not remember biting her tongue, but "all I could think about then was that I couldn't breathe! And didn't feel pain." She states that she is sure she "didn't pass out because I was staring at David the whole time while he was choking me, and that's why he was laughing at me! He said my eyes were bugging out!" The forensic nurse notices she has multiple double-arched bite marks on her posterior neck and back. Esther says that she reached out to her older sister, who has taken her in and is helping her "get over David."

Later, the forensic nurse heard that Esther moved back into David's home. David appeared in court, Esther dropped the charges, and she did not appear for the scheduled follow-up appointment with the advocate and forensic nurse.

Case Discussion

This case presents a complexity that forces the generalist forensic nurse to consider not only the biology of trauma and healing and the psychological conflicts that occur in domestic violence before elopement from the relationship, but also the social risk that occurs when data predicts mortality (eg, increased risk of homicide when strangulation is used in intimate partner violence).[1,2] The forensic nurse has basic nursing knowledge about assessment of hypoxic and anoxic brain injury and the neurologic outcomes. In order to determine the difference, the patient answers questions, and the forensic nurse evaluates the demeanor of the patient to inform the documentation. In this case, the patient reports (subjective history) that she experienced strangulation and battering (eg, documentation in quotes removes interpretation and bias of what is said).

OLDCARTS is an acronym to guide a complete subjective documentation. The forensic nurse evaluation of objective findings is an accurate description of what is seen (gross, enlarged, and/or microscopic), touched (palpation), heard (auditory or auscultation), or smelled/tasted (particularly useful in stranger assaults). Together, the subjective history and objective findings create a narrative that informs and guides advanced practice providers' care, which includes a basic workup and implementing the best practices of contrast angiographic studies.

In this case, the patient has multiple pattern injuries, with some evidence of underlying structural injury to the larynx, a hoarse voice, poor memory of how injuries occurred (tongue), and fear of worsening outcomes (eg, if she accuses her partner, she is uncertain about his reaction, which drives her decisions about health care; therefore she left the ED once cleared). Once Esther was away from her assailant and with her sister, she developed worsening symptoms (increasing signs and symptoms of airway obstruction) and support for leaving her partner. With the sister, she agreed to a thorough medical-legal evaluation. After the generalist forensic nurse's evaluation, she consulted with an advanced practice provider who completed the medical work-up that included contrast imaging of the neck.

Forensic nursing practice often occurs independently through memorandums or dependently through reassignment of duties in an organization. To protect the patient, the generalist forensic nurse without advanced practice credentials and licensure needs standing and signed medical protocols for management of patients with a strangulation history to ensure that the occasional dissected carotid is not missed and recovery from hypoxic and anoxic brain injury is adequately addressed throughout recovery. These protocols are as simple as referral to a hospital with recommendations from the community agency (who holds the Mutual Aid Memorandum of Understanding), to beginning the process of imaging and laboratory work for the advanced practice provider in the institution where the generalist forensic nurse works. Diagnosis warrants an ICD-9 or ICD-10 code for asphyxia or assault.[3] Keep in mind that medical workups are covered by insurance, and if the patient is uninsured, the Crime Victim's Compensation fund will cover additional medical expenses.[4]

Chapter 11

70-year-old Male Patient Assaulted by an Employee

Case History

John is a 70-year-old man living on the family farm. His wife died 15 years earlier. His 33-year-old daughter, Jenny, lived with him until recently when she moved out of the house. Although retired, John grows and sells flowers. He has many acres of land and uses temporary staff to care for and harvest the plants when they reach maturity. His head ranch hand, Michael, entered his home and asked where Jenny was. John would not reveal his daughter's location, and Michael became very angry. John told Michael that Jenny said she was uncomfortable around Michael and did not like to be around him. Michael became more enraged. Michael put his right hand around John's neck and pushed him into the wall. John tells the forensic nurse, "I couldn't talk or breathe, and the pressure was unbearable for a few seconds." When asked how he escaped, John says, "I pulled at Michael's fingers to get them off my neck," and then "I twisted my body until Michael let go."

John ran upstairs yelling, "Michael, get out of my house!" John says that Michael followed him upstairs threatening, "If you don't tell me where Jenny is, you'll be sorry." John reports that he was scared because Michael had never acted this way before. John ran into his upstairs bedroom and closed and locked the door. He says he told Michael he was going to call the police if Michael did not leave. John says, "Michael began to curse and pound on the door, so I ran out on the balcony." He closed the sliding door, realizing his phone was still inside the bedroom. He says he was so scared he contemplated jumping off the second story balcony. Because there was concrete on the ground under the balcony he hesitated, and at that moment Michael was able to break open the door. Michael came out onto the balcony and dragged John back into the bedroom. He pushed John down to the ground, knelt over him, and placed both hands around his neck while yelling and spitting in his face. John states he could not "breathe or make any sounds," and he started "to see black and felt warm." John remembers he attempted to "turn over thinking I could crawl away," but Michael put John in "a choke hold," and John "felt a sting" on his back.

Clinical Pearl:
Strangulation is a lethal form of assault with a variety of hypoxic and anoxic symptoms, necessitating careful history taking and documentation.

The next thing John remembers is that he was standing up, and Michael was telling him he would die next time if he did not tell him where Jenny was. John then told Michael that Jenny was in the guest house. He says, "She wasn't, but I thought maybe Michael would go look for her and I could get away." Michael ran downstairs and toward the guest house. John followed and jumped into his truck and started driving down the driveway. John states the gates to the farm were closed and he "couldn't remember which button to press to open the gate, so I rammed my truck through the gates." He says he was afraid to slow down because he thought Michael would be running after him. He knew he left his cell phone in the house, so he drove 2 miles down the road to his neighbor's house to call the police.

The neighbor saw John and called the police and for an ambulance. When the ambulance arrived, John was transported to the hospital. He had a complete trauma workup and was admitted. The forensic nurse was called 12 hours after the incident. When

asked about specific symptoms he experienced, John states he feels that his mouth is "full of spit," and it is painful to swallow. He states his voice is "much more raspy" than usual, his neck and back hurt, and he feels "like I can't really turn my head." He also states his mouth and back are "burning." He says he is not sure if he lost consciousness and knows he did not urinate, but when asked if he noticed his underwear was wet, he remembers that it was when the emergency department (ED) staff took it off. He says he "feels foggy" and states there "are some things I just can't make myself remember." The forensic nurse notes that John has signs of light erythema across both sides of his neck with linear abrasions on the anterior neck and chest. Multiple small, round bruises are observed within the hair of his beard around the jawline. He has a subconjunctival hematoma in the left eye and states, "I don't remember, but I don't think Michael punched or slapped me." John states that one of his front teeth is "wiggling," and bruising is noted on the left buccal area. He has a double-arched bite mark on his upper middle back and some bruising on his arms and shoulders. During the examination John states, "I thought this was it, I was going to be with my wife in heaven, but I never told him where Jenny really was."

John is discharged from the hospital after 2 days and is seen for a follow-up examination 7 days after the assault because he "needed to get all his doctor appointments taken care of." John says he still has headaches, "foggy moments," and his neck continues to be stiff and "is still swollen." His left neck shows a significant amount of dark bruising, and swelling is noted on his right and front neck. His neck circumference is measured at a 1-cm increase from the initial examination, and he is referred back to the ED.

Case Discussion

During an assault, manual strangulation does not require planning or additional weapons to control a victim. This case presents an elderly male patient who had no suspicion that the suspect would be violent with him. There are special considerations a health care provider must take into account when assessing a male victim. Does the patient have facial hair? If so, how would you assess for injury underneath the facial hair? Does the health care professional have an inherent bias about men as victims? Does society expect that men should be better equipped to protect themselves? According to the Center for Disease Control and Prevention,[1] approximately 1 in 10 men in the United States experience sexual violence, physical violence, and/or stalking by an intimate partner during their lifetime and report some form of intimate partner violence (IPV)–related impact. Commonly reported IPV-related impacts among male victims are fear, concern for safety, and symptoms of posttraumatic stress disorder, among others. In this case history it appears there could be additional dangers to the patient's daughter. The nature of the suspect's relationship with the patient's daughter is unknown. The patient diverted the suspect by sending him to find his daughter in a false location in order to escape.

The patient described a choke hold and a sting to his back. The patient did not know what caused the sting, so it is important for the examiner to inspect the patient from head to toe. The patient denies that he urinated or lost consciousness but reports his underwear was wet in the emergency room. The examiner should assess the circumference of the neck during the initial examination and repeat during the follow-up. It is concerning that the patient reports increased secretions, so the examiner should also assess if the patient is able to manage his own secretions and report any findings to the emergency medical care team. Because there is a possible period of amnesia, loss of consciousness, and involuntary urination, accompanied by presyncopal symptoms, is it imperative to assess for and discuss with the patient the significance of these symptoms (**Appendix 14**).

References

1. Violence prevention: intimate partner violence, sexual violence, and stalking among men. Centers for Disease Control and Prevention Web site. https://www.cdc.gov/violenceprevention/datasources/nisvs/men-ipvsvandstalking.html. Updated October 25, 2018. Accessed December 6, 2019.

Chapter 12

56-Year-Old Female Patient Assaulted by an Ex-Husband

Case History

Nina received final divorce papers while Guy was in jail for previous domestic violence assaults. Nina thought he was still in jail because she had not seen him for 6 months. However, last week, Guy began stalking her. Nina says that Guy had recently contacted her friend and said he wanted to get back together with Nina. He also asked the friend where Nina was staying. Nina believes that the red car parked outside her quilting group had been following her, and she has had hang-up calls on her phone recently. She believes Guy is responsible for both. Nina states she was leaving her home to go to the store and noticed the red car parked across the street. She turned to go back into the house, and Guy came up from behind. He grabbed her by her neck with one hand and her hair with the other and pushed her toward the door. She states he was squeezing her neck so hard that she "thought his fingers would rip her head off." He told her, "Open the door. We are both going in!" Nina says, "I started to scream," but Guy continued to push her into the house. Guy threw her on the ground by her neck. Nina says she landed on her back on the floor and thinks she hit her head. Nina says, "Guy kicked me in the ribs and told me that I was his and I could never be with anyone else." Nina says she sat up but was still on the ground. She says, "I told Guy that I didn't want to be with him anymore" and that it was not right "how he treated me."

Clinical Pearl:
Forty-eight states, 20 tribes, and 2 United States territories have passed laws to prosecute strangulation and suffocation assaults as a felony.

She says, "His eyes looked like the devil, and he jumped on top of me, pushing my head down to the ground with one hand." Once on the ground, he put both hands around her neck. "He was sitting on my stomach and had all his weight on my neck." Nina says that on a scale of 0 to 10, the pressure on her neck was a "10." She could not breathe or speak, and she began to see "floating lights." She says that "he was yelling at me, but I could not hear what he was saying to me." She says she was trying to pull his fingers off her neck, but she could not move them. She believes he was holding her neck for about 20 seconds. Nina begins to cry and says, "I thought I would never see my children and grandbaby ever again. I thought he was going to kill me."

The next thing Nina remembers is sitting on the couch while Guy was "doing something in the bedroom." She does not remember how she got onto the couch. She says that she could hear her neighbor outside barbecuing and ran out the front door, yelling for her neighbor. The neighbor ran toward her as Guy was coming out the door. Nina told the neighbor to call the police. Guy ran to his car and drove away.

After a comprehensive medical evaluation, Nina was discharged from the emergency department (ED). She is seen for a medical forensic examination after discharge. During the medical forensic history, Nina says that the doctor asked her what hap-

pened, but she tells to the nurse, "I didn't tell him the whole story." She says, "They did some x-rays of my arm and head." She states her whole body hurts, her voice "sounds funny," and she feels like her tongue is "a giant ball." She states it is hard to talk because she thinks she may have bit her tongue but does not remember it. She says it is hard to swallow, and she hears a high-pitched squeak in her right ear. When Nina is asked if she urinated during the assault, she says "no." Law enforcement reports that her shorts were wet when they arrived at the home, and she changed out of them before the paramedics came. When asked about her wet shorts, Nina says, "Oh, maybe I did pee a little, because I was really scared. I don't remember."

The nonfatal strangulation photography protocol was followed (**Appendix 1**). Nina demonstrated on a mannequin head the positions of her assailant's hands during the strangulation event (**Figure 12-1-a** and **b**).

Figure 12-1-a. *Hand positions of the first strangulation event when Nina was "pushed" into the house.*

Figure 12-1-b. *Hand positions during the second strangulation event when Nina was on her back, on the ground.*

Chapter 13

30-Year-Old Female Patient Assaulted and Strangled by an Intimate Partner

Case History

Victoria and Julio have known each other since childhood. They became romantically involved when they both arrived in the same United States community with work visas. Today, Victoria, who is a 30-year-old Hispanic woman, reports she was physically assaulted and strangled by Julio. She states, "I know why he's mad… I'm dating another man. When I saw him, he was yelling and screaming about me being a whore! I tried to walk away, and he attacked me from behind. He put his arm around my neck." She thinks Julio lifted her off the ground with his arm, and she could not breathe because of the pressure on her neck. She says she attempted to pull his arm away from her neck and dug her fingernails into his arm and her neck. Victoria reports that she blacked out and thinks she fell face-first onto the floor, creating a lip/tooth injury. Victoria reports that after waking up she was strangled a second time with associated unconsciousness and states she urinated "on myself." She complains of pain on the left side of her head, face, left shoulder, left neck, and upper chest. When asked if there was more to report, Victoria states, "That's all I remember." A translator was used in this case as Victoria was more comfortable using her native language.

Case Discussion

Victoria has a high risk for a carotid artery dissection for 2 reasons: (1) the application of compressive forces on the neck from the application of the forearm and (2) the stretching of the neck when she was lifted up by the neck. The history of being rendered unconscious twice with associated loss of bladder control indicates a prolonged period of anoxia. Urination is associated with a minimum of 15 seconds of continual pressure to the arteries taking oxygenated blood to the brain.[1] Many victims with anoxic brain injuries, manifested by the loss of consciousness and urination, require long-term follow-up for possible anoxic brain damage.

Clinical Pearl:
When domestic violence perpetrators strangle their victims, not only is this a felonious assault or possibly an attempted murder, but too often it can lead to a fatal outcome.

In this case, follow up with a health care provider should be included in the discharge instructions. This case will be complicated by the fact that the victim and the assailant are both in the United States on work visas. Many immigrants are afraid to admit they have been a victim of a crime in part because they believe they will be deported from the United States if they report the crime. United States law provides several protections for legal and undocumented immigrants who are victims of a crime. There are specific protections for victims of domestic violence, human trafficking, and other certain crimes. U nonimmigrant status (or U visa) offers immigration protection for victims and is also a tool for law enforcement. To obtain U status, the victim must obtain a certification from law enforcement. However, law enforcement officials should note that providing a certification does not grant a benefit; only US Citizenship and Immigration Services can grant or deny this benefit.[2] Case management is needed in this case because of the multidimensional issues relating to background, language barriers, and potential for lack of follow-up health care.

References

1. Kabat H, Anderson JP. Acute arrest of cerebral circulation in man. *Arch Neuro Psychiatr*. 1943;50(5):510–528.
2. Immigration options for victims of crimes. Department of Homeland Security Web site. https://www.dhs.gov/immigration-options-victims-crimes. Updated April 18, 2019. Accessed January 6, 2019.

Appendix

Appendix 1. Nonfatal Strangulation Photography*

Introduction

Health care providers working in the field of clinical forensic medicine often examine individuals who are victims of domestic violence and nonfatal strangulation. The use of this protocol promotes the continuing development of the highly specialized skills necessary for an effective evaluation and documentation of presenting symptoms from a person who has experienced a domestic violence and/or a nonfatal strangulation assault. This protocol is beneficial in assisting first responders, nurses, physicians, nurse practitioners, physician assistants, emergency department (ED) health care providers, attorneys, and law enforcement in the assessment and documentation of domestic violence and nonfatal strangulation cases in their communities.

Recommended Equipment

— Protective portable camera case (meets or exceeds IP67 • MIL C-4150J • Def Stan 81-41/STANAG 4280).

— Digital SLR camera capable of capturing RAW and JPG files (with appropriate accessories, depending on the camera system used).

— Hand-held camera remote.

— Foot pedal-controlled camera remote.

— Low-profile, quick-release camera stand with ball-head function.

— Photomacrographic scales.

— A computer (64-bit with 6 GB RAM) with 1.0 TB or greater of accessible local storage space. The best place to store forensic data is on a local, secure computer network. Never store digital evidence in the Cloud.

— Computer software and storage capable of reading and managing vast amounts of digital data.

— Computer software capable of securing and encrypting vast amounts of digital images and video at AES 256-bit federal military-level encryption standards.

— High-speed connection to the Internet (not less than 10 Mbps download and 5 Mbps upload).

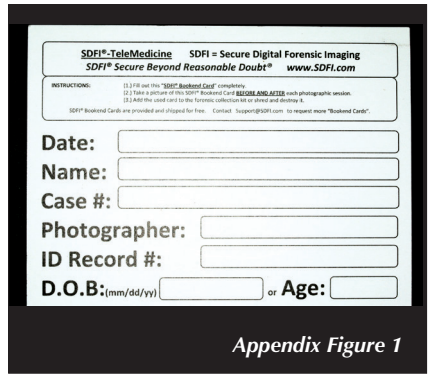
— Nested, end-to-end encrypted asynchronous file transfer technologies.

— Optional 24-inch or larger HDTV or screen with an HDMI connector.

Procedure

1. ***The bookend:*** The very first photo the medical forensic provider should capture is that of a bookend card (ie, a photograph of identifiable information of a subject to mark the beginning and end of a photodocumentation series), a patient's ID wristband, or a photo of a printed evidence label. Bookends are used to signify the beginning and end of a series of photographs representing 1 encounter with a patient. The bookend should include the following information: case number, patient name, date and time of the examination, and provider's name and title/license (**Appendix Figure 1**). (Note: A copy of the SDFI bookend card can be downloaded at no charge at http://www.sdfi.com/downloads/SDFI_1Up_Bookend_Card_Page_Scaling_None.pdf.)

Appendix Figure 1. *Bookend card.*



Appendix Figure 1

*Reprinted with permission from SDFI-Telemedicine LLC.

2. ***General condition:*** Photograph the full body using an overlapping photographic storyboard (**Appendix Figure 2-a** through **t**). A storyboard is a stepped method for documenting all areas and angles on a person presenting for evaluation. The storyboard is a series of overlapping photos of a subject, displayed in sequence, to show that each image in the series is a part of the whole. This series of photos will identify the patient and is useful in determining the general condition and presentation of the patient at the time of examination. The purpose of establishing photographs is to present the investigator with a continuous, overlapping perspective of the entire body.

   All swabbing for trace or biological evidence from the face structures is completed after initial storyboard photography. After the first series of photographs identifying the general presentation condition of the patient, swab for trace and biological evidence around mouth, ears, and neck, as well as other fluorescent areas. After swabbing, if the patient is wearing makeup, have the patient remove it gently with a wipe in preparation for an additional storyboard of the head and neck without makeup.

Appendix Figure 2-a through t. *Full-body photographs. (Note: Subject is a model commissioned for photographic demonstration. He is not a patient nor an assault victim.)*

Recommended Reading

Altmann AE, Ozanne-Smith J. Non-fatal asphyxiation and foreign body ingestion in children 0-14 years. *Inj Prev*. 1997;3(3):176-182.

Anscombe AM, Knight BH. Case report. Delayed death after pressure on the neck: possible causal mechanisms and implications for mode of death in manual strangulation discussed. *Forensic Sci Int*. 1996;78(3):193-197.

Baker RB, Sommers MS. Physical injury from intimate partner violence: measurement strategies and challenges. *J Obstet Gynecol Neonatal Nurs*. 2008;37(2):228-233.

Bergin A, Berkowitz R. Domestic violence in military families: non-fatal strangulation. *Md Med*. 2012;13(3):19-29.

Black MC, Basile KC, Breiding MJ, et al. *The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 summary report*. Atlanta, GA: National Center for Injury Prevention and Control; 2011.

Butz RO Jr. Length and cross-section growth patterns in the human trachea. *Pediatrics*. 1968;42(2):336-341.

Campbell JC. *Assessing Dangerousness*. Newbury Park, CA: Sage Publications; 1995.

Campbell JC, Anderson JC, McFadgion A, et al. The effects of intimate partner violence and probably traumatic brain injury on central nervous system symptoms. *J Womens Health (Larchmt)*. 2018;27(6):761-767.

Campbell JC, Glass N, Sharps PW, Laughon K, Bloom T. Intimate partner homicide: review and implications of research and policy. *Trauma Violence Abuse*. 2007;8(3):246-269.

Campbell JC. Nursing assessment for risk of homicide with battered women. *ANS Adv Nurs Sci*. 1986;8(4):36-51.

Campbell JC, Webster D, Koziol-McLain J, et al. Risk factors for femicide in abusive relationships: results from a multisite case control study. *Am J Public Health*. 2003;93(7):1089-1097.

Christe A, Oesterhelweg L, Ross S, et al. Can MRI of the neck compete with clinical findings in assessing danger to life for survivors of manual strangulation? A statistical analysis. *Leg Med (Tokyo)*. 2010;12(5):228-232.

Christe A, Thoeny H, Ross S, et al. Life-threatening versus non-life-threatening manual strangulation: are there appropriate criteria for MR imaging of the neck? *Eur Radiol*. 2009;19(8):1882-1889.

Clarot F, Vaz E, Papin F, Proust B. Fatal and non-fatal bilateral delayed carotid artery dissection after manual strangulation. *Forensic Sci Int*. 2005;149(2-3):143-150.

Dayapala A, Samarasekera A, Jayasena A. An uncommon delayed sequela after pressure on the neck: an autopsy case report. *Am J Forensic Med Pathol*. 2012;33(1):80-82.

Di Paolo M, Guidi B, Bruschini L, Vessio G, Domenici R, Ambrosino N. Unexpected delayed death after manual strangulation: need for careful examination in the emergency room. *Monaldi Arch Chest Dis*. 2009;71(3):132-134.