FRIDAYS AT THE UNIVERSITY

WOUND CARE | Keeping It All In Perspective

MARCH 5, 2021

AGENDA | 0800 - 1500

5.75 MAINPRO+ CREDITS
5.75 MOC SECTION 1 CREDITS

0800 The Balance Between Surgical and Non-Surgical Wound Care: Are We Out of Balance? | **Ed Buchel, MD**
0815 Understanding the Evidence: What is Fake News? | **Sadeesh Srinathan, MD**
0830 Understanding Wound Microbiology| **Andrew Walkty, MD**
0845 Questions and Answers | **All Speakers**
0900 Doing the Right Thing: Basic Concepts in Wound Healing | **Christian Petropolis, MD**
0915 Vascular Assessment and Ankle Brachial Blood Pressure Indices | **April Boyd, MD**
0930 How to Recognize, Evaluate, and Manage Prosthetic Joint Infection | **Eric Bohm, MD**
0945 Questions and Answers | **All Speakers**
1000 Coffee Break
1015 Pressure Management Considerations for the Wheelchair User | **Jennifer Birt, OT**
1030 Understanding and Optimizing Burn Wound Management | **Sarvesh Logsetty, MD**
1045 Diagnostic Imaging in Soft Tissue and Bone Infections | **Rick Bhullar, MD**
1100 Questions and Answers | **All Speakers**
1115 Fistulas, Fissures, and Abscesses and Their Management | **Ramzi Helewa, MD**
1130 Understanding Osteomyelitis | **John Embil, MD**
1145 Methods of Offloading the Diabetic Foot | **Nicklaus Gilmour, CO(c)**
1200 Questions and Answers | **All Speakers**
1215 Lunch and Sponsorship Break
1315 Recognizing Common Skin Disorders | **Marni Wiseman, MD**
1330 Chronic Ulcerations that Mimic Venous Stasis Ulcers | **Shane Silver, MD**
1345 Malignant Wounds: Recognition and Management | **Tarek Afifi, MD**
1400 Questions and Answers | **All Speakers**
1415 Case Discussions | **Tarek Afifi, MD, Shane Silver, MD, Marni Wiseman, MD**

Rady Faculty of Health Sciences | University of Manitoba

This event is online only

Recommended Readings

The Balance Between Surgical and Non-Surgical Wound Care: Are We Out of Balance?

- Jones RE, et al. Management of Chronic Wounds—2018. *JAMA* 2018; 320:1481–1482

Understanding the Evidence: What is Fake News?

- Gutatt GH, Oxman AD, Vist GE, Kunz R, Falck-Ytter Y, Schunemann HJ. GRADE: What is "Quality of Evidience" and Why is it Important to Clinicians. BMJ 2008; 336: 995-998.

Understanding Wound Microbiology

- Stevens DL, Bisno AL, Chambers HF, Dellinger EP, Goldstein EJ, Gorbach SL, Hirschmann JV, Kaplan SL, Montoya JG, Wade JC; Infectious Diseases Society of America. Practice guidelines for the diagnosis and management of skin and soft tissue infections: 2014 update by the Infectious Diseases Society of America Clin Infect Dis 2014; 59: E10-52.
- Stevens DL, Bisno AL, Chambers HF, Everett ED, Dellinger P, Goldstein EJC, Gorbach SL, Hirschmann JV, Kaplan EL, Montoya JG, Wade JC. Practice Guidelines for the Diagnosis and Management of Skin and Soft-Tissue Infections. Clin Infect Dis 2005; 41: 1373-1406.

Doing the Right Thing: Basic Concepts in Wound Healing

- Broussard KC, Powers, JG. Wound Dressings: Selecting the Most Appropriate Type. Am J Clin Dermatol 2013; 14: 449-459.

Vascular Assessment and Ankle Brachial Blood Pressure Indices

- Singer et al. Evaluation and Management of Lower Extremity Ulcers. N Engl J Med 2017; 377: 1559-67
- Eberhardt RT, Raffetto JD. Chronic Venous Insufficiency. Circulation 2014; 140: 333-346.

How to Recognize, Evaluate and Manage Prosthetic Joint Infections

- Osmon DR, Berbari EF, Berendt AR, Lew D, Zimmerli W, Steckelberg JM, Rao N, Hanssen A, Wilson WR; Infectious Diseases Society of America. Diagnosis and management of prosthetic joint infection: clinical practice guidelines by the Infectious Diseases Society of America. Clin Infect Dis 2013;56:e1-e25

Pressure Management Considerations For the Wheelchair User

- Chou R, Dana T, Bougatsos C, Biazina I, Stamer AJ, Reitel K, Buckley DI. Pressure Ulcer Risk Assessment and Prevention: A Systematic Comparative Effectiveness Review. Ann Intern Med 2013; 159: 28-38.
- Cullum N, Petherick E. Pressure ulcers. BMJ Clin Evid. 2008 Mar 19;2008. pii: 1901.
- Cushing CA, Phillips LG. Evidence-based medicine: pressure sores. Plast Reconstr Surg. 2013; 132:1720-1732

Understanding and Optimizing Burn Wound Management

- Jeschke MG, van Baar ME, Choudhry MA, Chung KK, Gibran NS, Logsetty S. Burn injury. Nat Rev Dis Primers. 2020; 6:11. doi: 10.1038/s41572-020-0145-5. PMID: 32054846; PMCID: PMC7224101.
- Greenhalgh DG. Management of Burns. N Engl J Med. 2019; 380:2349-2359

Diagnostic Imaging in Soft Tissue and Bone Infections

- Fugitt JB, Puckett ML, Quigley MM, Kerr SM. Necrotizing fasciitis. Radiographics. 2004; 24:1472-6.
- Hayeri MR, Ziai P, Shehata ML, Teytelboym OM, Huang BK. Soft-Tissue Infections and Their Imaging Mimics: From Cellulitis to Necrotizing Fasciitis. Radiographics. 2016; 36:1888-1910
- Lee YJ, Sadigh S, Mankad K, Kapse N, Rajeswaran G. The imaging of osteomyelitis. Quant Imaging Med Surg. 2016; 6:184-98.

Fistulas, Fissures and Abscesses and Their Management

- Vogel JD, Johnson EK, Morris AM, Paquette IM, Saclarides TJ, Feingold DL, Steele SR. Clinical Practice Guideline for the Management of Anorectal Abscess, Fistula-in-Ano, and Rectovaginal Fistula. Dis Colon Rectum. 2016; 59:1117-1133.

Understanding Osteomyelitis

- Lipsky BA, Berendt AR, Deery HG, Embil JM, Joseph WS, Karchmer, AW, Le Frock JL, Lew DP, Mader JT, Norden C, Tan JS; Infectious Diseases Society of America. Diagnosis and Treatment of Diabetic Foot Infections. Clin Infect Dis 2004; 39: 885-910
- Lipsky BA, Berendt AR, Cornia PB, Pil GC, Peters EJ, Armstrong DG, Deery HG, Embil JM, Joseph WF, Karchmer AW, Pinzur MS, Senneville E. Infectious Diseases Society of America. 2012 Infectious Diseases Society of America Clinical Practice Guidelines fo rhte Diagnosis and Treatment of Diabetic Foot Infections. Clin Infect Dis 2012; 54: E132-73.

Methods of Offloading the Diabetic Foot

- Bus SA, Armstrong DG, Gooday C, Jarl G, Caravaggi C, Viswanathan V, Lazzarini PA; International Working Group on the Diabetic Foot (IWGDF). Guidelines on offloading foot ulcers in persons with diabetes (IWGDF 2019 update). Diabetes Metab Res Rev. 2020 Mar;36 Suppl 1:e3274. doi: 10.1002/dmrr.3274. PMID: 32176441.
- Majid U, Argáez C. Off-Loading Devices for People with Diabetic Neuropathic Foot Ulcers: A Rapid Qualitative Review [Internet]. Ottawa (ON): Canadian Agency for Drugs and Technologies in Health; 2020 Jun 17. PMID: 33296155

Recognizing Common Skin Disorders?

- Alavi A, Sibbald RG, Ladizinski B, Saraiya A, Lee KC, Skotnicki-Grant S, Maibach H. Wound-Related Allergic/Irritant Contact Dermatitis. Adv Skin Wound Care 2016; 29: 278-286.
- Papi M, Papi C. Vasculitic Ulcers. Int J Lower Extrem Wounds 2016; 15: 6-616.
- Shavit E, Alavi A, Sibbald RG. Pyoderma Gangrenosum: A Critical Appraisal. Adv Skin Wound Care 2017; 30: 534-442.Jaleel T, Kwak Y, Sami N. Clinical Approach to Diffuse Blisters. Med Clin North Am 2015; 99: 1243-1267.

Chronic Ulcerations that Mimic Venous Stasis Ulcers

- Pannier F, Rabe E. Differential diagnosis of leg ulcers. Phlebology. 2013;28 Suppl 1:55-60

Malignant Wounds: Recognition and Management

- Glazer AM, Rigel DS, Winkelmann RR, Farberg AS. Clinical Diagnosis of Skin Cancer: Enhancing Inspection and Early Recognition. Dermatol Clin 2017; 35: 409-416.
- Linares MA, Zakaria A, Nizran P. Skin Cancer. Prim Care. 2015; 42:645-59.
- Chummun S, Mclean NR. The Management of Malignant Skin Cancers. Surgery 2017; 35: 519-524.
- Holte K, Biswis A. Pathology of Malignant Skin Tumors. Surgery 2017; 35: 478-483

The Balance between Surgical and Non- Surgical Wound Care: Are We Out of Balance?

Ed Buchel, MD
Section of Plastic Surgery, Department of Surgery
Max Rady College of Medicine, University of Manitoba

Abstract:
Wound care had grown into a multi-billion dollar industry in North America. Prevention of wounds is the most effective strategy , but wounds will always exist. Treatment option decision making is based on a few simple broad criteria: ACUTE vs CHRONIC, INFECTED vs CONTAMINATED vs CLEAN, and ETIOLOGY. Unfortunately in many cases decisions are based on the availability of wound care resources, what's the newest and "best", and not what's optimal to expedite wound closure.

This presentation will outline wound characteristics that require surgical treatment , the timing of that treatment and situations where surgical debridement is not indicated. Finally the presentation will highlight the benefits of timely definitive surgical treatment as a means to limit longer duration treatment with newer topicals and dressings.

Objectives:
By attending this session, the attendee will be able to:

1. Recognize the appearance of a wound needing surgical debridement
2. State the optimal timing for initial and serial surgical wound debridement
3. State the criteria for safe bedside debridement of chronic wounds

Multiple Choice Questions (Select the best answer)

1. Indications for surgical wound debridement include . Choose all that are correct
   a. Open wounds with rolled skin edges.
   b. Open wound with necrotic tissue and infection
   c. Open wounds that can be effectively packed open.
   d. Exposed hardware (plates and screws)

2. Debridement should continue until. (Choose the best 2 answers):.
   a. Venous bleeding (purple color blood) is visualized.
   b. Arterial bleeding is visualized.
   c. No remaining infection
   d. Neurovascular structures are encountered.
   e. All abscess cavities are drained (debrided)

3. After surgical debridement, effective dressings do the following: (Choose the best 2 answers).
   a. Control small amounts of bleeding
   b. Keep the wound moist
   c. Deliver high does antibiotics
   d. Allow easy dressing changes

Understanding the Evidence: What is Fake News

Sadeesh Srinathan, MD
Section of Thoracic Surgery, Department of Surgery
Max Rady, College of Medicine, University of Manitoba

Abstract:
We face a deluge of information, often in the form of "studies" making claims about a product or treatment. How do we approach these claims so that we can make judgments about their truthfulness? Are these studies "Fake News"?

Objectives:
By attending this session, the attendee will be able to:

1. State how a claim of causation can be made
2. State what bias is and how it works in clinical research
3. Have a strategy to evaluate claims of causation

Multiple Choice Questions (Select the best answer)

1. What statement does not support a causal relationship?
   a. With increasing doses, patients have fewer infections
   b. We found that there was a statistically significant rate of wound healing with our product, $p<.01$
   c. In patients who were treated with our product, the time to wound healing was 2 days compared to 20 days, $p<0.05$.

2. Which outcome is most resistant to bias?
   a. Mortality
   b. Wound healing assessment
   c. Quality of life
   d. Quantitative culture of the wound

3. Which feature is NOT reflective of a source of bias?
   a. Sample size
   b. Poor follow-up of patients
   c. Not blinding patients of their treatment
   d. Recruiting patients by an advertisement using social media

Understanding Wound Microbiology

Andrew Walkty, MD
Section of Infectious Diseases, Department of Medicine
Max Rady College of Medicine, University of Manitoba and Shared Health,

Abstract:
The microbiology laboratory assists clinicians in diagnosing infectious diseases, and provides guidance on appropriate patient treatment through antimicrobial susceptibility testing. The clinical utility of culture and susceptibility results is highly dependent on the laboratory receiving an appropriate specimen. When managing a wound, a clinician must decide if the wound appears clinically infected. If there is no evidence of infection, a specimen should not be submitted as the result provided by the laboratory will be difficult to interpret. When there is evidence of infection, an appropriate specimen should be collected in a way that minimizes contamination. Pathogens that are commonly implicated in wound and soft tissue infections include *Staphylococcus aureus* (methicillin-susceptible and resistant), and beta-hemolytic streptococci. Other organisms such as *Corynebacterium* spp. and coagulase-negative staphylococci are frequent skin colonizers. The goals of this presentation are to review the key pathogens that are involved in wound and soft tissue infections, describe how to appropriately obtain a specimen from a wound for culture (and how to complete the microbiology requisition), and provide guidance on how to interpret reports received by the microbiology laboratory.

Objectives:
By attending this session, the attendee will be able to:

1. State the names of common pathogens responsible for skin and soft tissue/wound infections
2. Describe how (and when) to submit a specimen to the microbiology laboratory and list key pieces of information that need to be included on the microbiology laboratory requisition
3. Interpret the data presented in microbiology laboratory reports

Multiple Choice Questions (Select the best answer)

1. Which of the following organisms is not typically responsible for acute skin and soft tissue infections in otherwise healthy hosts?
   a. Methicillin-susceptible *Staphylococcus aureus*
   b. Methicillin-resistant *Staphylococcus aureus*
   c. *Staphylococcus epidermidis*
   d. Group A *Streptococcus*
   e. Group C or G *Streptococcus*

2. Which of the following information must be included on the requisition that accompanies specimens submitted to the microbiology laboratory for culture?
   a. Patient's name, date of birth, and personal health information number
   b. Relevant clinical information
   c. Practitioner's name and contact information
   d. The test that is requested
   e. All of the above

3. Which of the following statements regarding specimen collection from a wound for culture is false?

a. Use of a swab to obtain the specimen is preferred over sending tissue or fluid to the laboratory for culture
b. A specimen for culture should not be obtained from a clinically uninfected wound
c. The wound should be cleansed and debrided before obtaining a specimen for culture
d. A specimen for culture should be promptly transported to the microbiology laboratory in a sterile container
e. A specimen for culture should be obtained prior to the initiation of antimicrobial therapy

Doing the Right Thing: Basic Concepts in Wound Healing

Christian Petropolis, MD
Section of Plastic Surgery, Department of Surgery
Max Rady College of Medicine, University of Manitoba

Abstract:
Wounds take on many forms and typically involve several inciting and propagating factors. A basic understanding of normal and abnormal healing pathways can help guide interventions at the wound site and systemically. To expedite successful wound closure appropriate debridement, nutritional optimization, control of underlying medical conditions and elimination of risk factors such as smoking should be implemented. Wound appearance along with inciting cause can typically guide the initial choice of dressing. For example wounds with excess moisture need absorption and those with necrotic tissue need debridement. A simple algorithm for both initiation and adjustment of dressings can allow all practitioners to make smart wound care choices.

Objectives:
By attending this session, the attendee will be able to:

1. Sate the basic processes involved in wound healing
2. State the common factors which inhibit wound healing
3. State a wound care algorithm for initiation and adjustment of care

Multiple Choice Questions (Select the best answer)

1. What is the most appropriate dressing for most wounds??
   a. Negative pressure wound therapy
   b. Saline moistened gauze
   c. Hydrogel
   d. Adaptic with polysporin

2. A clean wound from which a specimen was obtained yielded methicillin susceptible *Staphylococcus aureus*. Which of the following is the most appropriate dressing?
   a. Iodine-containing non-stick dressing
   b. Silver impregnated dressing
   c. Saline moistened gauze
   d. Chlorhexidine-impregnated gauze

3. Which dressing should be used on exposed tendons, bone or nerves?
   a. Negative pressure wound therapy
   b. Saline moistened gauze
   c. Hydrogel
   d. Non-adherent dressing with topical antibiotic

Vascular Assessment and Ankle Brachial Blood Pressure Indices

April Boyd, MD
Section of Vascular Surgery, Department of Surgery
Max Rady College of Medicine, University of Manitoba

Abstract:
The diagnosis of peripheral arterial disease is frequently made only after permanent damage has occurred; resulting in high rates of morbidity and potential amputation. A proper physical examination is crucial to distinguish arterial insufficiency from less limb-threatening conditions; such as venous insufficiency, and infectious and lymphatic-related processes. Often several etiologies need to be considered simultaneously. This session will review the principals of the vascular examination of the lower extremity and detail the role of ankle brachial index (ABI) testing in the diagnosis of arterial insufficiency.

Objectives:
By attending this session, the attendee will be able to:

1. Develop a focused and organized approach to the lower extremity peripheral vascular examination
2. State the key physical findings in lower extremity arterial insufficiency
3. State the principles and role ABI testing

Multiple Choice Questions (Select the best answer)

1. Which of the following is correct concerning lower extremity severe arterial insufficiency?
   a. Limb elevation causes pallor
   b. Skin tends to be hyper pigmented
   c. Ulceration is often associated with an ABI less than 0.3
   d. Ulcers are typical on the medial malleolus
   e. Compression stockings are beneficial

2. Which of the following is correct, concerning the measurement of ABIs
   a. A 4 Hertz probe is preferred
   b. Toe pressures are unreliable in diabetic patients
   c. An ABI of 1.35 is normal
   d. Supine positioning is required
   e. The arm used for brachial pressure measurement is irrelevant

3. Ankle brachial indices should be performed in all of the following situations except:
   a. A person who has ulcerations on the tips of the toes who does not have palpable pedal pulses.
   b. When there is doubt about the presence of pulses and there is concern about ischemia of the limb.
   c. When compression therapy is planned but the distal pulses are not palpable.
   d. A person with a leg ulcer and palpable pedal pulses

How to Recognize, Evaluate and Manage Prosthetic Joint Infection

Eric Bohm, MD
Section of Orthopedic Surgery, Department of Surgery
Max Rady College of Medicine, University of Manitoba

Abstract:
Prosthetic joint infection (PJI) occurring after hip or knee replacement surgery occurs in 1-2% of patients. They can occur early, within weeks of surgery, or late after many years. Risk factors include obesity, diabetes, increased age, male sex and previous surgery. Prompt physical examination and history looking for signs and symptoms of increased pain, swelling, redness and drainage are important. Relevant investigations include complete blood count (CBC), erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), x-rays and occasionally aspiration. Treatment is usually surgical, requirement debridement, sometimes exchange of implants, and initiation of antibiotics. Occasionally, long term suppressive antimicrobial therapy may be required in patients who are poor surgical candidates. Prompt identification can facilitate timely initiation of treatment and improve outcomes.

Objectives:
By attending this session, the attendee will be able to:

1. State the common presentations of prosthetic joint infection
2. Undertake the initial assessment of a patient with a potential joint infection
3. State the different treatment option for patients with an infected joint replacement

Multiple Choice Questions (Select the best answer)

1. The following are all risk factors for prosthetic joint infection?
   a. Increased age
   b. Male sex
   c. Diabetes
   d. Previous joint surgery
   e. All of the above

2. Appropriate initial investigations of prosthetic joint infection include:
   a. History and physical examination
   b. X-rays
   c. ESR and CRP
   d. White cell scan
   e. a, b, c

3. Appropriate management techniques of prosthetic joint infection may include:
   e. Watchful waiting
   f. Debridement and implant retention
   g. Longterm antibiotic suppression
   h. Stage revision with antibiotic coated implants
   i. b,c,d

Pressure Management Considerations for the Wheelchair User

Jennifer Birt, OT Reg (MB)
Health Sciences Centre, Shared Health

Abstract:
The pressure management needs of a full-time wheelchair user are complex and multifactorial. It is imperative for the seating clinician to consider these individuals' needs from a 24-hour pressure management perspective in order to determine and prioritize the extrinsic and functional factors that may impact skin health. This 24-hour perspective takes into consideration the functional tasks that an individual engages in on a daily basis, as well as their life scenario and environmental factors. How realistic it is for a person to buy-in and change their behaviours to ensure preventative or treatment strategies are realistic and successful must be incorporated into the treatment plan. Furthermore, the equipment requirements of a full-time wheelchair user are equally as complex and multifactorial. By applying a hierarchy of seating needs to the assessment and intervention steps that occur throughout the process of prescribing a complex wheelchair seating system, the seating clinician can ensure pressure management needs are being prioritized in combination with posture, comfort, mobility, and functional requirements. Identifying realistic and achievable goals for wound healing will then in turn consider all variables subsumed within the 24-hour approach, as well as the individual's engagement and buy-in.

Objectives:
By attending this session the attendee will be able to:

1. Define what 24-hour pressure management means in the context of a full-time wheelchair user
2. State the importance the seating hierarchy and how it informs wheelchair configuration and equipment selection
3. List 4 of the most common causes of pressure issues in full-time wheelchair users

Multiple Choice Questions:

1. If a full-time wheelchair user presents with a wound to their sacrum, which support surface and position is most likely to be the primary causative source of this wound?
   a. Sitting up in the wheelchair
   b. Partially reclined in bed
   c. Sitting on a commode seat
   d. Sitting on a bathseat

2. Which inter-relationship within the seating hierarchy is the most important to consider and prioritize in order to minimize the risk of pressure issues with wheelchair users?
   a. Pressure-comfort
   b. Pressure-function
   c. Pressure-posture
   d. Pressure-mobility

3. Sliding in a wheelchair is one of the most common issues that can negatively impact someone's skin health. If someone is regularly sliding in their wheelchair, what is/are the most effective strategy (or strategies) to treat the cause of this issue?
   a. Provide support and assistance to boost the individual back into place during the time they are sitting up
   b. Reassess ROM and adjust wheelchair angles to match the individual's available range
   c. Apply a lapbelt to keep the individual in position
   d. Change clothing and/or cushion cover to increase friction and keep them in position
   e. A & C only
   f. All of the above

Understanding and Optimizing Burn Wound Management

Sarvesh Logsetty, MD
Sections of General and Plastic Surgery, Department of Surgery
Max Rady College of Medicine, University of Manitoba

Abstract:
Burns are a common injury with potentially devastating consequences. There is often confusion regarding the optimum initial management of burn injury. This discussion will include information on topics such as how to cool a burn, what to do with blisters, when and how much fluid to give, when to give antibiotics, what dressings to use, and who to call when you need help.

Objectives:
By attending this session, the attendee will be able to:

1. Identify burns that are potentially life threatening and what management to initiate to reduce this risk
2. Identify which burn injured persons can be managed locally versus those that should be referred to the burn team
3. Decide on the appropriate dressings to use

Multiple Choice Questions (Select the best answer)

1. When resuscitating a major burn, the best endpoint is:
   a. The Parkland formula (without colloid)
   b. The Brooke formula (with colloid)
   c. Adequate urine output
   d. Normalized hematocrit

2. Which burns should be referred to the burn unit team:
   a. Chemical burns
   b. Electrical burns
   c. Burns that do not heal within 3 weeks
   d. All of the above

3. What dressing should you use on deep burns awaiting referral
   a. Topical antimicrobial ointment with a non-adherent dressing
   b. Hydrocolloid dressing
   c. Silver sulfadiazine
   d. Any silver based dressing

Diagnostic Imaging in Soft Tissue and Bone Infections

Rick Bhullar, MD
Department of Diagnostic Imaging, Shared Health Manitoba

Abstract:
Diagnostic imaging can be an important component of the clinical assessment of a patient with suspected infection. Knowing which test to order and when is vitally important, not only for the practice of good medicine but also for the appropriate management of healthcare resources. Having a basic understanding of the imaging findings of cellulitis, soft tissue abscess and osteomyelitis can help direct the next step in management.

Objectives:
By attending this session, the attendee will be able to:

1. Select the appropriate imaging test for assessment of wounds and suspected infections
2. State the limitations of diagnostic imaging in wound management
3. Identify general Xray, computed axial tomographic scan (CT) and magnetic resonance imaging scan (MRI) findings in cellulitis, soft tissue abscess and osteomyelitis

Multiple Choice Questions (Select the best answer)

1. A patient presents with diabetic foot ulcer. You suspect osteomyelitis of the first metatarsal head. What is the best initial imaging test you would now request:
   a. Xray of the foot
   b. CT
   c. MRI
   d. Ultrasound

2. You suspect necrotizing fasciitis in a toxic patient with severe pain and redness of the calf. Which statement is correct?
   a. CT findings can be nonspecific
   b. Necrotizing fasciitis is a clinical diagnosis
   c. If patient is severely toxic, treatment should not be delayed for imaging
   d. All of the above

3. Which of these is a common finding of osteomyelitis on a foot radiograph in a patient with a deep diabetic foot ulcer?
   a. Smooth fracture line
   b. Joint subluxation with intact joint space
   c. Irregular cortical erosion of underlying bone
   d. Usually the xray is normal

Fistulas, Fissures and Abscesses and Their Management

Ramzi Helewa, MD
Section of General Surgery, Department of Surgery
Max Rady College of Medicine, University of Manitoba

Abstract:
Perianal concerns are a common complaint by patients to Primary Care Providers. Although many patients state that their symptoms are related to "hemorrhoids," this is often times inaccurate. Perianal disease can be caused by a number of different issues including anorectal abscesses, anal fistulas, and anal fissures. Most can be diagnosed based on history alone. Symptoms of perianal pain and fevers guide the clinician to the diagnosis of an anal abscess. Anal abscesses are the result of the obstruction of an anal crypt gland, while a fistula is the chronic infection and resultant epithelialization of the abscess tract to the skin. Pelvic anatomy allows for potential spaces for anorectal abscesses to form. Standard treatment of anal abscesses includes timely operative drainage. Management of anal fistulas is more complex. Symptoms of anal pain without a fever, guide the clinician to the diagnosis of an anal fissure. Most anal fissures will improve with conservative, non-operative treatment.

Objectives:
By attending this session, the attendee will be able to:

1. State the difference between an anal fistula and anal fissure
2. State the mechanism for development for an anorectal abscess
3. State how to manage anal rectal abscess, anal fissure and fistulas

Multiple Choice Questions (Select the best answer)

1. A 26 year-old female presents with severe anal pain lasting 3 hours after every bowel movement. She has no risk factors for IBD. On exam, she has an anterior anal fissure and a sentinel anal tag. What is the best management?
   a. Urgent Colonoscopy
   b. Laxatives and topical nifedipine
   c. Fibre supplementation and topical nifedipine
   d. Lateral internal sphincterotomy

2. A 54 year-old male has a chronic draining sinus adjacent to his anus. On examination, there is no cellulitis. What is the best management?
   a. Oral antibiotics
   b. Referral for consideration of colonoscopy
   c. Refer to ER for urgent surgery
   d. Outpatient referral to surgeon for assessment

3. A 64 year-old female with diabetes presents with low grade fevers and pain in anal area. On exam, there is a fluctuant fullness with cellulitis over left buttock about 3 cm in size. Best management?
   a. Oral antibiotics alone
   b. Refer to ER for surgical assessment
   c. Incision and Drainage in the office
   d. Warm compresses

Understanding Osteomyelitis

John Embil, MD
Section of Infectious Diseases, Department of Medicine
Max Rady College of Medicine, University of Manitoba

Abstract:
Osteomyelitis is a term used to describe an infection of the bone. Osteomyelitis may develop as a result of either direct extension of infection from the overlying soft tissue envelope, or infection arising from a bloodstream infection depositing microorganisms in a specific location in bone. Another mechanism by which osteomyelitis may occur is by the implantation of a foreign body such as orthopedic hardware that is used to repair a fracture. In persons with diabetes who lack protective sensation, ulcerations may develop on the plantar aspect of the feet. These ulcerations can extend directly to bone and cause bone infections. The most common microorganism is *Staphylococcus aureus* either methicillin susceptible or resistant. Osteomyelitis can be acute or chronic. Treatment of osteomyelitis depends upon location, extent, and stability of the affected bone.

Objectives:
By attending this session, the attendee will be able to:

1. State the mechanism by which osteomyelitis develops
2. State why the person with diabetes is prone to osteomyelitis of foot bones
3. State why osteomyelitis is difficult to eradicate

Multiple Choice Questions (Select the best answer)

1. The most common cause of osteomyelitis in the bones of the feet of person with diabetes is:
   a. *Salmonella typhi*
   b. Haemophilus influenza
   c. *Staphylococcus aureus*
   d. *Mycobacterium tuberculosis*

2. Which of the following is the optimal way to diagnose osteomyelitis?
   a. Bone biopsy
   b. Superficial swab
   c. Just start antibiotics and observe clinical progress
   d. Treatment is not required as the condition will resolve itself with time.

3. All of the following are steps in the diagnosis and treatment of osteomyelitis except:
   a. Obtain a specimen for culture to guide antimicrobial therapy
   b. Obtain a plain radiograph as the first step
   c. Obtain a magnetic resonance imaging scan as the first step
   d. Use appropriate wound care for any open wounds

Methods of Offloading the Diabetic Foot

Nick Gilmour CO(c)
Department of Orthotics
Health Sciences Centre, Shared Health

Abstract:
Many practitioners are aware that treatment of diabetic foot ulcers frequently requires off-loading the wound. However, it is less clear how that offloading should be accomplished. There are a wide variety of devices that can be used to offload the diabetic foot and several departments/clinics within Winnipeg that provide them. It is important that health care workers understand how these devices fit into the care plan, and how to help their patients obtain these devices.

Objectives:
By attending this session, the attendee will be able to:

a. Identify what loads contribute to callus/ulcer formation
b. Differentiate between offloading devices used in acute wound care vs maintenance/ prevention of a wound
c. Understand the role of different orthotic devices in the care for diabetic foot.
d. Understand how to patients can get these devices

Multiple Choice Questions (Select the best answer)

1. Which of the following loading conditions contribute to diabetic foot wounds?
   a. Pressure
   b. Shear
   c. Pressure gradient
   d. All of the above

2. A custom foot orthosis can effectively off-load areas of the foot no matter what shoe the patient uses.
   a. True
   b. False

3. Which of the following devices can be effective in off-loading the foot?
   a. Foot orthoses
   b. Shoe modifications
   c. Ankle foot orthoses (AFOs)
   d. Charcot restraint orthotic walkers (CROWs)
   e. All of the above

Recognizing Common Skin Disorders

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Abstract:
The recognition of common skin disorders is important to patient management to facilitate the appropriate selection of therapeutics. Common papulosquamous skin disorders include psoriasis vulgaris and lichen planus. The appropriate recognition of dermatitis is also essential, including atopic dermatitis, contact dermatitis and nummular dermatitis.

Distinguishing between acne vulgaris and rosacea may pose diagnostic challenges to the clinician.

Finally, disorders of pigmentation including vitiligo and its mimics need to be recognized**.**

Objectives:
By attending this session, the attendee will be able to:

1. State the clinical manifestations of common papulosquamous disorders
2. State the clinical manifestations of various forms of dermatitis, and distinguish these from papulosquamous disorders
3. Differentiate the morphology of acne vulgaris from rosacea and recognize clinical variants of rosacea

Multiple Choice Questions (Select the best answer)

1. The primary distinguishing morphologic feature between acne vulgaris and rosacea is:
   a. Inflammatory papules are present in rosacea but not acne
   b. Inflammatory papules are present in acne but not rosacea
   c. Open comedones are present in rosacea, but not acne
   d. Open and closed comedones are present in acne, but not rosacea
   e. None of the above

2. Psoriasis is a common papulosquamous skin disorder with the following clinical features:
   a. Well defined scaly erythematous plaques
   b. A tendency to involve scalp, elbows, knees, periumbilical areas
   c. Involvement of nails in some individuals
   d. An association with a seronegative arthritis
   e. All of the above

3. A “major” clinical feature of atopic dermatitis NOT included in diagnostic criteria: (pls note: 3 or more Major criteria are required for a diagnosis of AD):
   a. Typical morphology and distribution (flexural in adults, extensor and facial in infants and children)
   b. Chronic course of disease
   c. Tendency towards cutaneous infection
   d. Pruritus
   e. Personal or Family history of atopy

Chronic Ulcerations that Mimic Venous Stasis Ulcers

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Abstract:
Venous Stasis ulcers can be difficult to treat at the best of times. We have all had instances when we are treating these ulcers and they are either slowly improving or not improving at all. In fact there are instances when they may be progressing despite our best efforts. There may be a number of reasons for this. The ulcer is refractory, there is non-adherence, but more importantly maybe this isn't a venous stasis ulcer after all. In this presentation I will be focusing on chronic ulcers, which should be in your differential diagnosis when a patient presents with a ulcer compatible with venous stasis.

Objectives:
By attending this session, the attendee will be able to:

1. State clinical features of a chronic ulceration, which can differentiate it from a venous stasis ulcer
2. State the differential diagnosis for venous stasis ulceration
3. State how to evaluate a patient with a chronic ulceration to come up with your diagnosis

Multiple Choice Questions (Select the best answer)

1. When assessing a patient with a leg ulceration which feature would make you think of pyoderma gangrenosum
   a. An ulcer edge which is flush with the base of the ulcer
   b. An overhanging ulcer edge with a purple hue
   c. Scale and dermatitis around the ulceration
   d. Minimal pain mentioned by the patient?

2. A chronic ulcer which has not been responding to therapy should
   a. Have increase compression therapy
   b. Be put on prophylactic antibiotics
   c. Have a biopsy taken to ensure no alternate diagnosis
   d. Told to go home find some maggots and put it on the wound.

3. Which skin cancer can most commonly occur from chronic ulcerations:?
   a. Melanoma
   b. Merkel cell carcinoma
   c. Basal cell carcinoma
   d. Squamous cell carcinoma

Malignant Wounds: Recognition and Management

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Abstract:
Malignancy is an important consideration in chronic leg ulcerations. Malignancy can complicate an existing leg ulcer of long duration or can mimic a leg ulcer of benign etiology. Health care professionals who evaluate and manage leg ulcers should recognize when a malignancy may be present. Clinical features suggestive of cancer and an approach to diagnosing cancer will be reviewed.

Objectives:
By attending this session, the attendee will be able to:

1. Name 3 mechanisms by which a skin cancer may present as a wound/ulcer
2. State clinical features that suggest a wound is malignant
3. State how to diagnose a malignant wound

Multiple Choice Questions (Select the best answer)

1. Which of the following is LEAST suggestive of a malignant ulcer?
   a. Failure to heal despite optimal management for 3 weeks
   b. Sudden growth of a longstanding ulcer
   c. An indurated border
   d. An ulcer in an immunosuppressed host

2. Which of the following is NOT a reasonable method for diagnosing a 4x3 cm leg ulcer as malignant?
   a. Urgent dermatology referral
   b. Biopsy of the wound margin
   c. Excision and repair of the ulcer

3. Which of the following is NOT a mechanism by which a malignancy is associated with an ulcer?
   a. Malignant transformation within an existing nonmalignant ulcer
   b. Immune complex deposition in a vessel wall
   c. Tissue breakdown in a primary tumor
   d. A reactive inflammatory process related to an internal malignancy

Case Discussions

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Abstract:
In this session, the presenters will provide a series of cases that highlight key issues in the diagnosis and treatment of wounds.

Objectives:
By attending this session, the attendee will be able to:

1. Consolidate their knowledge from the preceding sessions
2. Formulate a strategy for diagnosis and treatment of open wounds
3. Understand when to call for help

Multiple Choice Questions (Select the best answer)

1. A 78-year old man presents with a history of a one year non-healing ulceration that is 1cm in diameter with rolled edges. This lesion is located on the left anterior shin. It has not responded to the dressings that have been used to date. What is hte next best course of action?
   a. Change the type of dressing from self-adhesive foam to an antibiotic impregnated dressing
   b. Obtain a biopsy
   c. Start oral antibiotics while awaiting the results of the specimen for culture
   d. Start empiric oral antibiotics

2. A non-healing lesion with black pigmentation is observed on the medial aspect of your patient's left fifth toe. Which of the following signs should alert you to a serious problem?
   a. Lesion occurred without trauma
   b Black pigmentation
   c. Left groin adenopathy
   d. All of the above

3. Which of the following makes the diagnosis of a neuropathic foot ulcer more likely than an ulceration caused by arterial insufficiency?
   a. Lack of protective sensation
   b Ulceration is located on the plantar surface of the foot overlying a bony prominence
   c. Presence of palpable pedal pulses
   d. All of the above

Answers to Multiple Choice Answers:

1. **The Balance between Surgical and Non- Surgical Wound Care: Are We Out of Balance?**
    1. b,
    2. b,e
    3. a,b

2. **Understanding the Evidence: What is Fake News**
    1. b
    2. a
    3. d

3. **Understanding Wound Microbiology**
    1. c
    2. e
    3. a

4. **Doing the Right thing: Basic Concepts in Wound Healing**
    1. b
    2. c
    3. c

5. **Vascular Assessment and Ankle Brachial Blood Pressure Indices**
    1. a
    2. d
    3. d

6. **How to Recognize, Evaluate and Manage Prosthetic Joint Infection**
    1. e
    2. e
    3. e

7. **Pressure Management Considerations for the Wheelchair User**
    1. b
    2. c
    3. b

8. **Understanding and Optimizing Burn Wound Management**
    1. c
    2. d
    3. a

9. **Diagnostic Imaging in Soft Tissue and Bone Infections**
    1. a
    2. d
    3. c

10. **Fistulas, Fissures and Abscesses and Their Management**
    1. c
    2. d
    3. b

11. Understanding Osteomyelitis

1. c
2. a
3. c

12. Methods of Offloading the Diabetic Foot

1. d
2. b
3. e

13. Recognizing Common Skin Disorders

1. d
2. e
3. c

14. Chronic Ulcerations that Mimic Venous Stasis Ulcers

1. b
2. c
3. d

15. Malignant Wounds: Recognition and Management

1. a
2. c
3. b

16. Case Discussions

1. c
2. d
3. d