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Hemorrhoids

Contents

Review Article	3
Clinical Method	8
Case Review	10
Health News	11
Diagnosis at a Glimpse	12
View Point	13
Practice	17
Info Quiz	19

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Editorial

Dear Doctor,

At first we express our heartiest gratitude for your encouraging regarding "Info Medicus".

Your inspiration motivate us to produce certain article those are informative and entertaining. We are also delighted to have many of you joined our online issue of "Info medicus".

In this issue, we have focused on "Hemorrhoids" as Review Article which is one of the most common medical conditions. Hemorrhoids are the swelling and inflammation of veins in the rectum or anus. If hemorrhoids are left untreated, they can produce severe consequence. Based on this concept, we have discussed about the pathophysiology and other clinical backgrounds of hemorrhoidal disease, followed by the current approach to non-operative and operative management.

Endotracheal extubation is the final step in liberating a patient from mechanical ventilation. A failed extubation can lead to deterioration in patient's condition. For this reason "Endotracheal Extubation "was discussed in clinical method.

Intraocular cholesterol may be present as free crystals or contained within foreign body granulomatous inflammation, macrophages, or fibrous tissue. There are number of causes leading to cholesterolosis. Treatments including multiple sessions of cryotherapy and laser to retina may lead to complete resolution of the retinal detachment. Coats disease is an uncommon cause of cholesterolosis, an ocular condition which can present very similarly to retinoblastoma with leucoria, squint and retinoblastoma. That's why we have inflated case review on "Intraocular cholesterol crystals".

Besides this, in view point we have put emphasis on pathophysiology, triggering factor, major symptoms, how to diagnose and the treatment option of migraine, which is a relatively common medical condition experienced by both men and women.

In Diagnosis at a Glimpse, we have featured three case scenarios which we think will be pleasurable exercise for you.

We also have discussed about "Posterior Shoulder Dislocations" in practice which is seen most often in men aged 20-49 years, caused due to posterior displacement of the humeral head relative to the glenoid. If its diagnosis is delayed serious morbidity may cause.

Thanks and best regards,



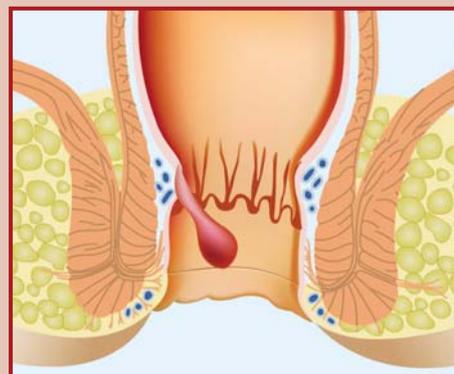
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Hemorrhoids

Hemorrhoids are a very common anorectal condition defined as the symptomatic enlargement and distal displacement of the normal anal cushions. They affect millions of people around the world and represent a major medical and socioeconomic problem. Multiple factors have been claimed to be the etiologies of hemorrhoidal development, including constipation and prolonged straining. The abnormal dilatation and distortion of the vascular channel, together with destructive changes in the supporting connective tissue within the anal cushion, is a paramount finding of hemorrhoidal disease. An inflammatory reaction and vascular hyperplasia may be evident in hemorrhoids. This article firstly reviewed the pathophysiology and other clinical backgrounds of hemorrhoidal disease, followed by the current approaches to non-operative and operative management.



Pathophysiology

Hemorrhoid cushions are a part of normal human anatomy and become a pathological disease only when they experience abnormal changes. There are three main cushions present in the normal anal canal. These are located classically at left lateral, right anterior and right posterior positions. They are composed of neither arteries nor veins, but blood vessels called sinusoids, connective tissue, and smooth muscle. Sinusoids do not have muscle tissue in their walls, as veins do. This set of blood vessels is known as the hemorrhoidal plexus. Hemorrhoid cushions are important for continence. They contribute to 15-20% of anal closure pressure at rest and protect the anal sphincter muscles during the passage of stool. When a person bears down, the intra abdominal pressure grows, and hemorrhoid cushions increase in size helping to maintain the anus closed. Hemorrhoid symptoms are believed to result when these vascular structures slide downwards or when venous pressure is excessively increased. Increased anal sphincter pressure may also be involved in hemorrhoid symptoms. Two types of hemorrhoids occur: internals from the superior hemorrhoidal plexus and externals from the

inferior hemorrhoidal plexus. The dentate line divides the two regions.

Types of hemorrhoids

The two types of hemorrhoids are external and internal. These are differentiated by their position with respect to the dentate line. Some patients may concurrently have symptomatic versions of both.

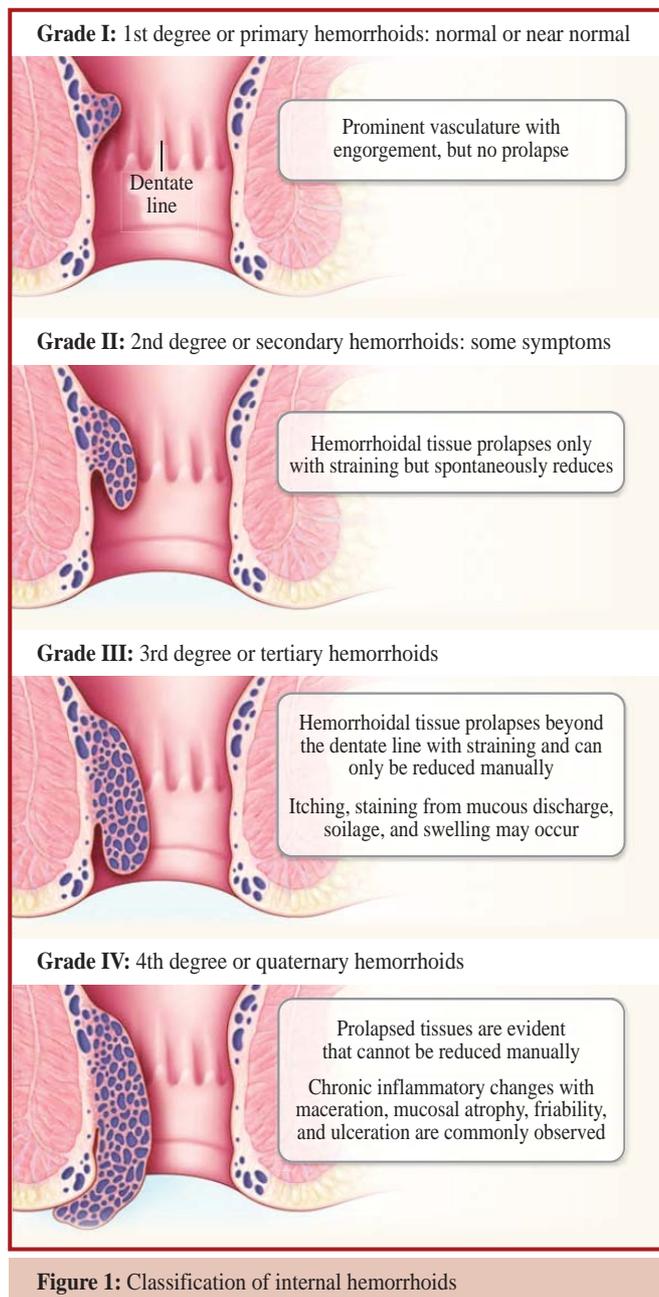
Internal hemorrhoids

Painless rectal bleeding or prolapse of anal tissue is often associated with symptomatic internal hemorrhoids. Prolapse is hemorrhoidal tissue coming from the inside that can often be felt on the outside of the anus when wiping or having a bowel movement. This tissue often goes back inside spontaneously or can be pushed back internally by the patient. The symptoms tend to progress slowly over a long time and are often intermittent.

Internal hemorrhoids are classified by their degree of prolapse, which helps determine management. Table 1 shows the classification of internal hemorrhoid.

Table 1: Classification of internal hemorrhoid grades

Grade	Bleeding/Prolapse
Grade I	Bleeding only, no prolapse
Grade II	Prolapse with defecation, spontaneous reduction
Grade III	Prolapse with defecation, must be manually reduced
Grade IV	Prolapsed, incarcerated, cannot be manually reduced (painful)



External hemorrhoids

These are small soft pads around the anal opening, the same color as skin. Symptomatic external hemorrhoids often present as a bluish colored painful lump just outside the anus and they tend to occur spontaneously and may have been preceded by an unusual amount of straining. The skin overlying the outside of the anus is usually firmly attached to the underlying tissues. If a blood clot or thrombosis develops in this tightly held area, the pressure goes up rapidly in these tissues often causing pain. The pain is usually constant and can be severe. Occasionally the elevated pressure in the thrombosed external hemorrhoid results in breakdown of the overlying skin and the clotted blood begins leaking out. Patients may also complain of intermittent swelling, pressure and

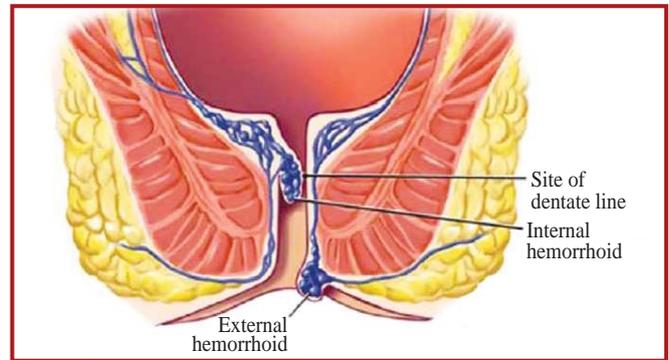


Figure 2: External hemorrhoids

discomfort, related to external hemorrhoids which are not thrombosed.

Causes

The exact cause of symptomatic hemorrhoids is unknown. A number of factors are believed to play a role including: irregular bowel habits (constipation or diarrhea), lack of exercise, nutritional factors (low fiber diets), increased intra abdominal pressure (prolonged straining, ascites, an intra abdominal mass, or pregnancy), genetics, an absence of valves within the hemorrhoidal veins, and aging. Other factors believed to increase risk include obesity, prolonged sitting, a chronic cough, and pelvic floor dysfunction. Evidence for these associations, however, is poor.

Evaluation and diagnosis

Clinical manifestations

The clinical manifestations of symptomatic hemorrhoids vary with the extent of the disease process. Patients who present for diagnosis and treatment typically report hematochezia, itching, perianal discomfort, soiling, or some combination of these symptoms. The rectal bleeding typically occurs with or immediately after defecation. Blood may be noticed on toilet paper, in toilet water or occasionally, staining the underwear. Patients should be queried about their fiber and fluid intake, bowel patterns (including stool frequency), bathroom habits (e.g., reading while seated on the toilet), the need for digital manipulation of prolapsed tissue, and whether there is a history of soiling or incontinence.

Other disease processes must be considered. Substantial pain is rare in patients with uncomplicated internal or external hemorrhoids. The presence of severe pain raises the possibility of other conditions, including anal fissure, perirectal or perivaginal infection, abscess, and other inflammatory processes, although severe pain may occur with complications of hemorrhoids (e.g., prolapse with incarceration and ischemia or thrombosis). Bleeding, irritation, or pain may also occur in patients with perianal dermatitis, colorectal cancer, inflammatory bowel disease,



diverticular disease, angiodysplasia, anal warts, anal polyps, or rectal ulceration.

Careful examination of the anus and the surrounding pelvic regions is necessary for accurate diagnosis. The prone jackknife position (in which the patient lies on the stomach, facing downward, with the knees bent at a 90° angle) allows the anorectum to be examined efficiently, although the lateral decubitus position may provide adequate visualization for patients who have physical limitations. Examination in the lithotomy position may also be necessary. Inspection may show an anal fissure in patients who report severe pain and bleeding during defecation. A digital rectal examination should be performed if possible.

Many patients with symptomatic hemorrhoids have reducible venous congestion that distorts the normal anorectal architecture. Those with more advanced disease may have friability of the skin overlying the venous complexes, evidence of soilage or seepage, and irritation of surrounding tissues. Any abnormalities discovered in the absence of hemorrhoidal venous dilatation should raise concern about other disease processes. Full thickness protrusion of rectal tissue with eversion and evidence of concentric mucosal folds is characteristic of rectal prolapse; diagnosis of this disorder may be facilitated by asking the patient to perform a valsalva maneuver while seated.

All abnormalities should be described according to their location relative to the dentate line anterior or posterior, left or right, and proximity to normal anatomical structures rather than relative to their position on a clock face. Anoscopy can identify more than 99% of anorectal diseases and should be performed in any patient suspected of having hemorrhoids. The standard grading system for hemorrhoids should be used. However, this system does not incorporate other findings that may influence clinical decision making, such as size, presence or absence of discomfort that substantially impairs activities of daily living, or severity of bleeding. Laboratory testing is not necessary for patients with uncomplicated disease.

Imaging and endoscopy

Flexible endoscopy is not as successful as anoscopy for examining the anorectum. Rigid proctoscopy, though used less commonly now than previously, also allows adequate visualization of structures near the dentate line. The decision to perform a more extensive colorectal evaluation should be informed by the patient's age, presenting signs and symptoms and their duration, and the nature of bleeding. Evaluation of the entire colon is indicated for patients with any of the following anemia, bleeding that is not typical of hemorrhoids, a change in bowel patterns, a personal history of rectal or colon polyps, a family history of inflammatory bowel disease,

colorectal cancer, or other hereditary colorectal diseases in a first degree relative or other suspected pathologic pelvic changes that could contribute to the patient's symptoms. Although sigmoidoscopy may be reasonable as an initial strategy in low risk patients with hematochezia, double contrast barium enema or colonoscopy is indicated in patients in whom the presentation or family history raises concern about proximal disease, colonoscopy is preferred by many clinicians.

For symptomatic patients younger than 50 years of age who have no risk factors for colonic disease and no evidence of other anorectal abnormalities and in whom examination confirms the presence of uncomplicated disease, hemorrhoid treatment can be administered in lieu of endoscopy or imaging studies. Persistent bleeding or other symptoms after successful local treatment of hemorrhoids is an indication for further evaluation.

Treatment

Dietary and lifestyle modification

Some dietary and lifestyle modification may help to soften stool and establish a regular schedule for bowel movements and avoid the straining that can help to prevent hemorrhoids. People should add more fiber to diet and should set a goal of 25 to 30 grams of fiber daily, from such high fiber foods as beans, broccoli, carrots, bran, whole grains and fresh fruits. Alternatively, many people find that it is more convenient to take a fiber powder such as psyllium or methylcellulose. People also should drink adequate amounts of fluid. For most healthy adults, this is the equivalent of 6 to 8 glasses of water daily. And people should begin a program of regular exercise. As little as 20 minutes of brisk walking daily can stimulate bowel to move regularly. And finally, practice to have regular bowel movements. Schedule a time to sit on the toilet at approximately the same time each day. The best time to do this is usually right after a meal. And do not sit on the toilet for long periods (it tends to make hemorrhoids swell up and push out). Respond immediately to the urge to have a bowel movement. Do not postpone until the time is more convenient.

Medical treatment

Oral flavonoids: These venotonic agents were first described in the treatment of chronic venous insufficiency and edema. They appeared to be capable of increasing vascular tone, reducing venous capacity, decreasing capillary permeability, and facilitating lymphatic drainage as well as having anti-inflammatory effects. Although their precise mechanism of action remains unclear, they are used as an oral medication for hemorrhoidal treatment, particularly in Europe and Asia. Micronized purified flavonoid fraction (MPFF), consisting of 90% diosmin and 10% hesperidin, is the most common flavonoid used in clinical treatment.



Oral calcium dobesilate: This is another venotonic drug commonly used in diabetic retinopathy and chronic venous insufficiency as well as in the treatment of acute symptoms of hemorrhoids. It was demonstrated that calcium dobesilate decreased capillary permeability, inhibited platelet aggregation and improved blood viscosity; thus resulting in reduction of tissue edema.

Topical treatment: The primary objective of most topical treatment aims to control the symptoms rather than to cure the disease. Thus, other therapeutic treatments could be subsequently required. A number of topical preparations are available including creams and suppositories, and most of them can be bought without a prescription. Strong evidence supporting the true efficacy of these drugs is lacking. These topical medications can contain various ingredients such as local anesthesia, corticosteroids, antibiotics and anti-inflammatory drugs.

Non-operative treatment

Sclerotherapy: This is currently recommended as a treatment option for first and second degree hemorrhoids. The rationale of injecting chemical agents is to create a fixation of mucosa to the underlying muscle by fibrosis. The solutions used are 5% phenol in oil, vegetable oil, quinine, and urea hydrochloride or hypertonic salt solution. It is important that the injection be made into submucosa at the base of the hemorrhoidal tissue and not into the hemorrhoids themselves; otherwise, it can cause immediate transient precordial and upper abdominal pain. Misplacement of the injection may also result in mucosal ulceration or necrosis, and rare septic complications such as prostatic abscess and retroperitoneal sepsis. Antibiotic prophylaxis is indicated for patients with predisposing valvular heart disease or immunodeficiency because of the possibility of bacteremia after sclerotherapy.

Rubber band ligation: Rubber band ligation (RBL) is a simple, quick, and effective means of treating first and second degree hemorrhoids and selected patients with third degree hemorrhoids. Ligation of the hemorrhoidal tissue with a rubber band causes ischemic necrosis and scarring, leading to fixation of the connective tissue to the rectal wall. Placement of rubber band too close to the dentate line may cause severe pain due to the presence of somatic nerve afferents and requires immediate removal. RBL is safely performed in one or more than one place in a single session with one of several commercially available instruments, including hemorrhoid ligator rectoscope and endoscopic ligator which use suction to draw the redundant tissue in to the applicator to make the procedure a one person effort. The most common complication of RBL is pain or rectal discomfort, which is usually relieved by warm sitz baths, mild analgesics and avoidance of hard stool by taking mild laxatives or bulk forming agents.

When an internal hemorrhoid is present in the anorectal canal (Panel A), an anoscope may be used as a guide to internal rectal venous

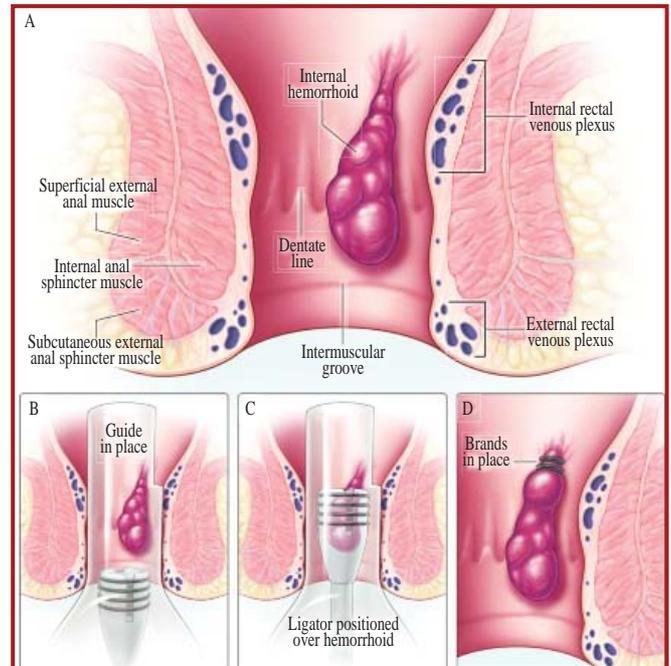


Figure 3 (Panel A, B, C, D): Rubber band ligation

plexus. External rectal venous plexus identify the hemorrhoidal complex and isolate its base (Panel B). With the lighted guide in place, a ligating device (ligator) is positioned over the base of the hemorrhoid, and the bands are released (Panel C). After the procedure is completed, the constricting (Panel D) bands remain in place until they eventually fall off (typically because the tissue distal to the constricting bands sloughs).

Radiofrequency ablation: Radiofrequency ablation (RFA) is a relatively new modality of hemorrhoidal treatment. A ball electrode connected to a radiofrequency generator is placed on the hemorrhoidal tissue and causes the contacting tissue to be coagulated and evaporized. By this method, vascular components of hemorrhoids are reduced and hemorrhoidal mass will be fixed to the underlying tissue by subsequent fibrosis. RFA can be performed on an outpatient basis and via an anoscope similar to sclerotherapy. Its complications include acute urinary retention, wound infection, and perianal thrombosis.

Cryotherapy: Cryotherapy ablates the hemorrhoidal tissue with a freezing cryoprobe. It has been claimed to cause less pain because sensory nerve endings are destroyed at very low temperature. However, several clinical trials revealed that it was associated with prolonged pain, foul smelling discharge and a high rate of persistent hemorrhoidal mass.

Operative treatment

An operation is indicated when non-operative approaches have failed or complications have occurred. Different philosophies regarding the pathogenesis of hemorrhoidal disease creates different surgical approaches.



Hemorrhoidectomy: Excisional hemorrhoidectomy is the most effective treatment for hemorrhoids with the lowest rate of recurrence compared to other modalities. It can be performed using scissors, diathermy or a sealing device such as Ligasure and Harmonic scalpel. Excisional hemorrhoidectomy can be performed safely under perianal anesthetic infiltration as an ambulatory surgery. Indications for hemorrhoidectomy include failure of non-operative management, acute complicated hemorrhoids such as strangulation or thrombosis, patient preference, and concomitant anorectal conditions such as anal fissure or fistula in ano which require surgery. In clinical practice, the third degree or fourth degree internal hemorrhoids are the main indication for hemorrhoidectomy.

complications following this procedure such as bleeding and pelvic pain.

Stapled hemorrhoidopexy: In stapled hemorrhoidopexy (SH), a circular stapling device is used to excise a ring of redundant rectal mucosa proximal to hemorrhoids and resuspend the hemorrhoids back within the anal canal. Apart from lifting the prolapsing hemorrhoids, blood supply to hemorrhoidal tissue is also interrupted. Nevertheless, patients undergoing DGHAL returned to work quicker, and had fewer complication rates than those receiving SH. Table 2 shows the management of internal hemorrhoids by grades.

Table 2: Current management of internal hemorrhoids by grade

Treatments	Grade I	Grade II	Grade III	Grade IV
Dietary and lifestyle modification	Applicable	Applicable	Applicable	Applicable
Medical	Applicable	Applicable	Applicable-selected	
Non-operative treatment				
Sclerotherapy	Applicable	Applicable		
Rubber band ligation	Applicable	Applicable	Applicable-selected	
Radiofrequency ablation	Applicable	Applicable		
Infrared coagulation	Applicable	Applicable		
Operative treatment				
Hemorrhoidectomy		Applicable-selected	Applicable	Applicable
Doppler guided hemorrhoidal artery ligation		Applicable	Applicable	
Plication		Applicable	Applicable	
Stapled hemorrhoidopexy			Applicable	Applicable

Doppler guided hemorrhoidal artery ligation: A new technique based on Doppler guided ligation of the terminal branches of the superior hemorrhoidal artery which is an alternative to hemorrhoidectomy. Doppler guided hemorrhoidal artery ligation (DGHAL) has become increasingly popular in Europe. The rationale of this treatment was later supported by the findings from vascular studies, which demonstrated that patients with hemorrhoids had increased caliber and arterial blood flow of the terminal branch of the superior rectal arteries. Therefore, ligating the arterial supply to hemorrhoidal tissue by suture ligation may improve hemorrhoidal symptoms. DGHAL is most effective for second or third degree hemorrhoids.

Plication: Plication is capable of restoring anal cushions to their normal position without excision. This procedure involves oversewing of hemorrhoidal mass and tying a knot at the uppermost vascular pedicle. However, there are still a number of potential

Conclusions

The patient described in the vignette has symptoms suggestive of hemorrhoids. Examination would be expected to reveal excess hemorrhoidal tissue originating proximal to the dentate line and consistent with grade I or II disease. Given this patient's age, colonoscopy is warranted if it has not been performed. Initially, attention to bowel regulation and local hygiene is an appropriate approach. If medical management is ineffective after 6 to 8 weeks, subsequent treatment should be guided by the treating clinician's expertise and the patient's preferences, but in office rubber band ligation would be a reasonable next step. Excisional therapies are generally reserved for patients in whom rubber-band ligation fails and for those with grade IV disease or complications.

- References:**
1. *Clin. Gastroenterol Hepatol* 2013; 11(6): 593-603
 2. *World J. Gastroenterol* May 7, 2012; 18(17): 2009-2017
 3. *Clinical Gastroenterology and Hepatology* 2013; 11:593-603
 4. *N. Engl. J. Med.* September 4, 2014, 371;10: 944-951

Endotracheal extubation

Endotracheal extubation refers to the removal of an endotracheal tube from the trachea. This procedure is commonly performed in operating rooms, postanesthesia care units, and intensive care units. Endotracheal tubes are initially placed to secure an airway for the administration of anesthetic agents, to provide airway protection, or to provide positive pressure mechanical ventilation; these indications are not mutually exclusive. Once endotracheal intubation is no longer needed, extubation is indicated. However, the decision to extubate a patient must be made carefully, particularly because respiratory and airway related complications are more likely to occur after endotracheal extubation than after endotracheal intubation. Although many of the problems related to endotracheal extubation are minor, serious complications can arise. These complications include cardiovascular stress, pulmonary aspiration, hypoxemia, and even death. Respiratory failure can occur almost immediately or later after extubation. To minimize the possibility of complications related to the removal of an endotracheal tube, a plan for airway management is required. It is important to anticipate the possibilities of difficulties in airway management, cardiopulmonary instability, and the need to reintubate the trachea.

Indication

Endotracheal extubation is indicated when the clinical conditions that required airway protection with an endotracheal tube or that required mechanical ventilation are no longer present.

Contraindication

Endotracheal extubation is contraindicated when the patient's ability to protect the airway is impaired (i.e. the patient does not have protective airway reflexes) or when the patient cannot maintain adequate spontaneous respiration (i.e. the patient has persistent weakness in the respiratory muscles, hypoxemia, or hypercarbia). Extubation may also be contraindicated in certain

patients in the presence of cardiovascular instability, metabolic derangements, or hypothermia.

Equipment and medication

Equipment selection is guided by the need to prevent complications and to maintain airway patency, oxygenation, and ventilation. The equipment needed to continuously monitor the patient's vital signs should be on hand, as should a suction device for the removal of airway secretions. Supplemental oxygen and an appropriately sized face mask with a bag valve device should also be close at hand. Oropharyngeal and nasopharyngeal airways should be readily available in case they are needed to improve airway patency. A laryngoscope, endotracheal tubes, and stylets should be on hand in case immediate reintubation of the trachea is necessary. An induction agent, such as propofol, and a muscle relaxant, such as succinylcholine, can facilitate emergency reintubation.

If it is difficult to achieve ventilation with a face mask (Figure 1) or if reintubation is difficult, a supraglottic rescue device, such as a laryngeal mask airway, may provide adequate oxygenation and ventilation. In the rare event that it is not possible to ventilate or reintubate the patient after extubation, establishing immediate airway access by performing a cricothyroidotomy may be necessary.

Routine extubation

Endotracheal extubation is usually performed when patients are awake or have emerged from general anesthesia. Make sure that adequate pain control is established. Cardiovascular stability, normal acid base status, normothermia, and intact protective airway reflexes should be present. If neuromuscular blockade was induced, the blockade must be fully reversed.

In preparation for extubation, the ventilator should be adjusted to ensure that adequate respiratory effort is present with minimal support. Oxygenation should be maximized, with 100% inspired oxygen delivered through the breathing circuit. Place the patient in a semirecumbent position to reduce the work of breathing and improve oxygenation; moving the patient from a supine to a semirecumbent position increases functional residual capacity, allowing for longer periods of apnea before oxygen desaturation occurs. Make sure that the tidal volume, respiratory rate, and inspiratory force are at appropriate levels before beginning extubation.

Suction the patient's endotracheal tube with a disposable catheter or an inline suction device, and then carefully remove any tape or securing device in preparation for extubation. Avoid inducing abrupt head and neck movements, which may cause the endotracheal tube



Figure 1: Administration of supplemental oxygen



to stimulate the trachea and trigger coughing. A patient with an injury to the cervical spine may require additional neck support. Carefully suction any oropharyngeal secretions (Figure 2) avoiding trauma to the teeth and the airway. To minimize the risk that the patient will bite the endotracheal tube, which could cause occlusion of the tube or result in dental injury, a bite block or an oral airway may be used.



Figure 2: Suctioning of the oropharynx

When the patient is ready for extubation, attach a syringe to the pilot balloon and completely deflate the cuff of the endotracheal tube. To maximize alveolar recruitment during endotracheal extubation, positive pressure ventilation with oxygen can be provided with a bag valve device. After extubation, immediately verify that the airway is patent and that adequate spontaneous ventilation is occurring. Observe the face mask for the rhythmic condensation of exhaled breath. Phonation and speech after extubation are reassuring signs that injury to the vocal cords and acute glottic edema have largely been prevented. Continue to provide supplemental oxygen through the face mask until the patient has fully recovered.

Extubation of morbidly obese patients

When extubating morbidly obese patients with obstructive sleep apnea, readiness to support ventilation and maintain airway patency are very important. Before extubation, make sure the patient is fully awake and able to respond appropriately to commands. Upright positioning of the patient is strongly recommended so that the excess body tissue on the chest and against the diaphragm is displaced caudad, which will reduce the work of breathing and increase the functional residual capacity. After extubation, the

patient should be kept in a semirecumbent position and should be monitored closely for acute airway obstruction.

Complications of extubation

Although few extubation related complications are life threatening, hypoxemia is the common pathway to severe complications. In the period immediately after extubation, early respiratory insufficiency may be caused by poor ventilation or residual neuromuscular blockade. Bronchospasm and severe coughing can also impair adequate ventilation and can be treated with topical or intravenous local anesthetic agents, intravenous opioids, or bronchodilators, as indicated. Acute upper airway obstruction may be caused by laryngospasm, especially in children. Vocal cord dysfunction is a rare cause of airway obstruction and sometimes requires immediate reintubation. The possibility of vocal cord dysfunction should be investigated if there is a suspicion of injury to the recurrent laryngeal nerves. Patients with laryngeal edema due to prolonged intubation or direct compression of the glottis can present with delayed airway obstruction and inspiratory stridor. Impairment of the airway and swallowing reflexes can pose a risk of pulmonary aspiration. Manipulation of the airway is usually noxious for patients, causing increased myocardial demand; pretreatment with opioids or beta blockers can reduce this catecholamine mediated stress. If the medical indications that led to intubation have not been adequately resolved, progressive decompensation may occur after extubation, ultimately leading to reintubation. A tracheostomy is indicated if safe extubation cannot be achieved in 7 to 14 days.

Summary

Endotracheal extubation should be performed without causing trauma, while maintaining adequate oxygenation and ventilation. The equipment needed to provide suction, ventilation, and reintubation should be readily available. If extubation is judged to be unsafe, the procedure should be postponed and the patient reevaluated. Most complications related to extubation are preventable. Before performing extubation, the clinician must carefully prepare the medical resources needed to address reasonably foreseeable complications. A failed extubation can lead to a precipitous deterioration in the patient's condition, and attempts to improvise solutions under these challenging circumstances are rarely satisfactory.

Reference: N. Engl. J. Med. January 16, 2014, Vol. 370, N (3)

Info Quiz Answers (January-March 2015)

1. a, b, c 2. d 3. d 4. a, c, d 5. a, b, c 6. b 7. a, c, e 8. b, c 9. a, b, d 10. c, d, e

Intraocular cholesterol crystals

A 2 year old male child was referred to the eye clinic with a 2 month history of an intermittent right divergent squint and a whitish pupillary reflex, first noted by the patient's mother. Visual acuity was reduced to perception of light in the affected right eye. Examination under anaesthesia revealed subretinal lipid exudation, total retinal detachment and dilated, telangiectatic blood vessels in the temporal retinal periphery, all consistent with a diagnosis of Coats disease.

Intraocular cholesterol crystals (cholesterosis) present as multiple refractile particles suspended within the intraocular environment. There are a number of causes leading to cholesterosis. Treatment was commenced with multiple sessions of cryotherapy and laser to the retina. This led to an almost complete resolution of the retinal detachment with a small residual tractional detachment inferiorly. Two years following the initial diagnosis, a dense white cataract developed, precluding any view of the retina. He underwent cataract extraction with removal of the posterior capsule, but without intraocular lens implantation as the eye had poor visual potential. Four months following cataract surgery, examination revealed multiple yellow, refractile particles suspended in the posterior segment and anterior chamber (Figure 1 and Figure 2). The patient was diagnosed with ocular cholesterosis secondary to Coats disease.

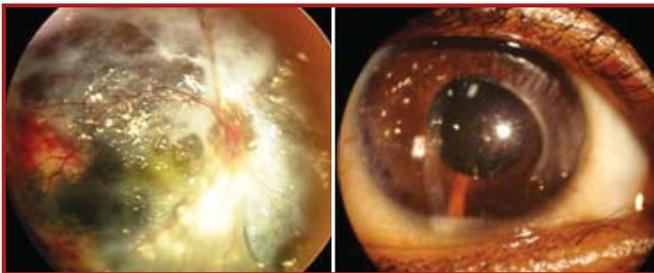


Figure 1: Photograph of the right eye posterior segment showing multiple refractile particles within the vitreous cavity.

Figure 2: Anterior segment photograph of the right eye showing multiple refractile particles suspended within the anterior chamber.

Coats disease is an uncommon cause of cholesterosis and is one of the main differential diagnoses for a child presenting with leucocoria. It is an ocular condition defined as "Idiopathic retinal telangiectasia associated with intraretinal exudation and frequent exudative retinal detachment without signs of appreciable retinal or

vitreal traction". It is most commonly unilateral and mainly affects male children. It can present very similarly to retinoblastoma with leucocoria, squint and reduced vision. Retinoblastoma is the most common primary intraocular malignancy of childhood, and Coats disease has previously been cited as the most common other cause of enucleation when unable to distinguish the two entities. Care must be taken to distinguish between the refractile appearance of the crystals as seen in this case and calcified vitreous seeds in retinoblastoma which are white, not refractile and of varying sizes. Active retinoblastoma seeds are white, fluffy and easier to distinguish from the lesions seen in this case. Visual prognosis in advanced Coats disease is generally poor, and if not treated can lead to a blind painful eye secondary to neovascular glaucoma but early cases can respond very well to treatment with good visual outcomes. The mainstay of treatment is cryotherapy and laser to the abnormal retinal vessels to limit exudation. Ocular cholesterosis has also been reported following vitreous haemorrhage, hyphaema, trauma, chronic ocular inflammation or chronic retinal detachment. The crystals are thought to precipitate from the breakdown products of red blood cells or from the lipid exudate which typifies Coats disease. In this case, transudation of lipid occurred across the retina due to either idiopathic retinal holes associated with the primary pathology or possibly iatrogenically induced holes secondary to cryotherapy and laser. As the eye was aphakic without a posterior capsule, it would give the crystals free access to the anterior chamber. The striking appearance of cholesterosis (Figure 1 and Figure 2) should alert the clinician to an underlying ocular pathology, of those mentioned above, requiring further evaluation to elicit the cause.

Reference: Postgrad. Med. J. January 2014, Vol. 90 No. 1059, p 58-59



For reducing cholesterol, corn oil better than olive oil

A study published in the January/February 2015 edition of the *Journal of Clinical Lipidology* suggests that between corn oil and extra virgin olive oil, the corn variety does a better job.



In a doubleblind, randomized controlled crossover feeding study, researchers at Biofortis, a global clinical nutrition research team for dietary industry clients, found that corn oil lowered LDL cholesterol by nearly 11 percent, compared to extra virgin olive oil's 3.5 percent reduction. Corn oil similarly lowered total cholesterol by over 8 percent compared to about 2 percent for extra virgin olive

oil. Fiftyfour healthy men and women participated in the study and received four tablespoons of one of the oils in the same foods every day. Researchers measured the participants' fasting blood samples before and after each treatment phase of the study.

Reference: foxnews.com/health

Everyday chemical exposure linked to earlier menopause

A new study from Washington University School of Medicine found that women who had high levels of certain chemicals in their bodies experienced menopause two to four years earlier than women with lower levels of the chemicals. Researchers looked at



blood and urine levels of 111 chemicals that are suspected of interfering with natural hormone production and distribution."Chemicals linked to earlier menopause may lead to an early decline in ovarian function, and our results suggest we as a society should be concerned," senior author Dr. Amber Cooper, an assistant professor of obstetrics and gynecology, said in a news release.

A decline in ovarian function can adversely affect fertility and lead to earlier development of heart disease, osteoporosis and other health problems. The chemicals had previously been linked to certain cancers, metabolic syndrome, and early puberty in younger females.

Reference: foxnews.com/health

Miracle baby

Every baby is a miracle, but some babies are so miraculous. Among them baby Silas is one of the miracle boys. He was born fully enclosed in the amniotic sac a term called an 'en caul' birth. Baby



Silas, was delivered by cesarean section at the Cedars Sinai Medical Center in California and was born at only 26 weeks of gestation. At the time of delivery his hands were visible pressing against the clear membrane of the sac and he is receiving oxygen via the placenta. His physician was so surprised by the rare birth that he snapped a photo on his cell phone while his team rushed to ensure that the baby's breathing and heart rate were normal. Now the bay is ten weeks old with good health and her mother accept he will going home in less than a month's time.

Reference: foxnews.com/health

Problem 1



A 56 year old woman presented to the urgent care center with a lump in the arch of her right foot which she stated had been slowly progressing in size over the past several months. She further noted experiencing pain on ambulation that had been unresponsive to over the counter nonsteroidal anti inflammatory drugs (NSAIDs). Physical examination of the affected foot revealed an ovoid shaped lump on the medial band of the plantar fascia measuring approximately 1.5 cm x 0.8 cm. Moderate palpation elicited pain. There was no surrounding erythema or edema, and the lump was nonmobile, adherent to the fascia, and accentuated on dorsiflexion of the hallux.

What is the diagnosis?

Reference: Emrg. Med. February 2014, Vol. 46, No. 2, p: 81-82

Problem 2

A 77 year old man presented to the urgent care center with a 3 week history of a blistering, intensely pruritic, and sometimes burning rash bilaterally on the extensor surfaces of his arms and legs, which he correlated to recent beer intake. His past medical history was positive for decades of similar outbreaks that had been controlled with oral dapsone, which he recently discontinued for unspecified reasons. He denied any gastrointestinal complaint. Physical examination revealed scattered vesicles and bullae of the affected areas; no similar lesions were noted elsewhere.

What is the diagnosis?



Reference: Emrg. Med. February 2014, Vol. 46, No. 2, p: 81-82

Problem 3



A 48 year old woman presents to the urgent care center with dermatitis around her nose and mouth, which she states has been progressing in severity over the past several months and is at times pruritic. She had been treating the site twice daily with topical betamethasone dipropionate cream and had also been on intermittent doses of oral corticosteroids. Physical examination reveals a pronounced erythematous papulopustular eruption of the affected areas. The rash did not involve her neck, forehead, or scalp.

What is the diagnosis?

Reference: Emrg. Med. December 2013, Vol. 45, No. 12, p: 31-32

Please see the answers  Page 16



Migraine

A migraine is a relatively common medical condition that can severely affect the quality of life of the sufferer and his or her family. Migraine is most commonly experienced by both men and women between the ages of 25 and 39 although it is three to four times more common in women than in men. The higher incidence of migraines in women may be related to hormonal changes, including ovulation, menstruation, oral contraceptives, pregnancy and menopause. Migraines can lead to both physical pain and emotional suffering. When migraines are unpredictable, frequent, or chronic, a sufferer may become frustrated, sad, angry, or depressed. When severe, migraines can affect one's quality of life and lessen productivity in school and in the work place. Migraines, however, are treatable and preventable. Caring, supportive friends, family, co workers and health care providers can help lessen the pain of migraine sufferers. People with migraines can also help themselves by learning about their headaches, building a good working relationship with their health care provider, and practicing personal self care.



Pathophysiology

Although the mechanism of migraine is not completely understood, it is clear that vascular dysfunction alone does not adequately explain its pathophysiology. Migraine is not primarily a vascular headache, but rather it is fundamentally a brain disorder. The condition is best explained as a dysfunctional pain response to an as yet unidentified trigger that does not appear to cause tissue damage or otherwise threaten the body or brain. In migraine, normally non noxious stimulation, such as light, sound, and touch, is perceived as painful. The trigeminal nerve is activated inappropriately and is a central component of activated pain pathways. Cortical spreading depression, a slow gap junction mediated wave of depolarization causing changes in vascular and neural function, is associated with migraine aura. It is not yet understood why migraine attacks begin, and research to understand the migraine brain is ongoing.

Triggering factor

Migraine headaches tend to first appear between the ages of 10 and 45. Sometimes, they begin later in life. Migraine attacks may be triggered by:

- Caffeine withdrawal
- Changes in hormone levels during a woman's menstrual cycle or with the use of birth control pills
- Changes in sleep patterns
- Drinking alcohol
- Exercise or other physical stress
- Loud noises or bright lights
- Missed meals
- Odors or perfumes
- Smoking or exposure to smoke
- Stress and anxiety

Migraines can also be triggered by certain foods. Most common are:

- Chocolate
- Dairy foods
- Foods with monosodium glutamate (MSG)
- Baked goods
- Foods with tyramine, which includes red wine, aged cheese, smoked fish, chicken livers, figs, and certain beans
- Fruits (avocado, banana, citrus fruit)
- Meats containing nitrates (bacon, hot dogs, salami, cured meats)
- Onions
- Peanuts and other nuts and seeds
- Processed, fermented, pickled, or marinated foods

People who suffer from migraine

Migraine is common in both men and women. But women suffer more than men. About 1 in 4 women and about 1 in 12 men develop migraine at some point in their lives. It most commonly first starts in childhood or as a young adult. Some people have frequent attacks, sometimes several a weeks. Others have attacks only now and then. Some people may go for years between attacks. In some people, the migraine attacks stop in later adult life.

Symptoms

Though presentations may be quite varied, migraine typically presents as a pulsating, unilateral headache, and is associated with nausea, vomiting, photophobia, phonophobia, and osmophobia. Migraine however, also may present bilaterally and be associated with muscle pain or spasms. It is the constellation of symptoms rather than any one symptom in particular that leads to the correct diagnosis. Classically, the prodromal aura, which is reported by



fewer than 20% of patients, precedes the onset of headache pain by no more than 1 hour and resolves by the time the headache begins. Many migraine patients, however, report visual or sensory disturbances during the headache phase itself. Other prodromal symptoms such as change in mood (e.g. depression, sense of well being, euphoria) and appetite commonly precede the acute headache by several days. Table 1 provides diagnostic criteria and characteristics of migraine with aura and without aura.

acute migraine and tension type headaches are likely to respond to similar treatments such as sumatriptan, the antiemetic dopamine antagonists, and parenteral ketorolac.

Treatment

There is a large and varied armamentarium for treating acute migraine. First line parenteral choices include migraines specific medications (e.g. sumatriptan, dihydroergotamine), nonsteroidal

Table 1. Diagnostic criteria and characteristics of migraine with and without aura

Migraine without aura	
Duration	Headache lasts 4-72 hours without treatment.
Diagnostic criteria	Headache is characterized by at least two of the following criteria: unilateral location, pulsating or throbbing quality, moderate or severe intensity, aggravation by routine physical activity. Also, there is at least one of the following: nausea, photophobia and phonophobia.
Characteristics	Location is usually frontotemporal. Headache is not attributable to another disorder.
Migraine with typical aura	
Duration	The aura has a duration of 1 hour or less.
Diagnostic Criteria	Headache criteria are comparable to those of migraine without aura that begins during the aura or follows the aura within 60 minutes. Fully reversible visual symptoms, but no motor weakness, including positive features (flickering lights, spots, or lines) and/or negative features (loss of vision) and/or fully reversible sensory symptoms including positive features (pins and needles) and/or negative features (numbness) and/or fully reversible dysphasic speech disturbance. At least two of the following are present: homonymous visual symptoms and/or unilateral sensory symptoms, at least one aura symptom develops gradually after at least 5 minutes and/or different aura symptoms occur in succession after over 5 minutes, each symptom lasts at least 5 minutes but less than 60 minutes.
Characteristics	Additional loss or blurring of central vision may occur. History and physical and neurological examinations do not suggest. Alternative disorders as the cause of headache. With aura.

Diagnosis

Given the high prevalence of patients with migraine and the relatively uncommon occurrence of malignant secondary headaches, migraine can often be correctly diagnosed based solely on specific historical features of the headache. Following clinical features can be seen:

- Pulsating headache quality
- Duration of 4 to 72 hours
- Unilateral pain
- Nausea
- Disabling pain.

Patients with three or four of the above features can be diagnosed as having a migraine headache with high sensitivity and specificity. The combination of functional disability, nausea, and sensitivity to light has a high positive predictive value for a diagnosis of migraine among patients with recurrent episodes of headache. These symptom checklists allow the health care provider to make a more specific diagnosis in a patient with a recurrent headache disorder. However, distinguishing among the various types of primary headache disorders prior to treatment is often unnecessary for the

anti-inflammatory drugs (NSAIDs) (e.g. ketorolac), and the various antiemetic dopamine antagonists (Table 2).

Ergotamines and antiemetics

In addition to sumatriptan, dihydroergotamine, administered with an antimigraine antiemetic such as prochlorperazine, is another highly effective treatment option. Since the ergotamines have vasoconstrictive and oxytocic effects on the placenta and may cause harm to the fetus, they are rated Category X. As with sumatriptan, these agents are appropriate for use in non pregnant patients and patients who have no cardiovascular risk factors.

Nonsteroidal anti-inflammatory drugs

Parenteral NSAIDs may also be considered to treat acute migraine. A recent meta analysis of ketorolac for acute migraine showed it to be as effective as meperidine and the phenothiazines and more effective than intranasal sumatriptan. Side effect profiles among the drugs were similar. However, it was common for patients receiving ketorolac to require rescue medications more frequently than patients receiving alternative medications for migraine. Given these findings, it is more appropriate to use ketorolac as a second line rather than first line agent for the treatment of acute migraine.



Table 2. Evidence based parenteral treatment of migraine

Name	Dose
Triptan	
Sumatriptan	6 mg subcutaneously
Ergotamines	
Dihydroergotamine	1 mg intravenously
Nonsteroidals	
Ketorolac	30 mg intravenously or 60 mg intramuscularly
Antidopaminergics	
Metoclopramide	10 mg intravenously
Prochlorperazine	10 mg intravenously
Droperidol	1.25 to 2.5 mg intravenously

Antiemetic dopamine antagonists

Antiemetic dopamine antagonists such as metoclopramide, prochlorperazine, and droperidol are effective anti migraine agents. Intravenous metoclopramide and prochlorperazine have outperformed subcutaneous sumatriptan in head to head trials. Each of these medications has demonstrated superiority to placebo. Hyperkinetic motor side effects, such as akathisia or abrupt onset restlessness, are common but can be prevented with anticholinergics such as diphenhydramine. Irreversible motor disturbances after one dose of these medications have never been reported.

Occipital nerve block

Regional nerve blocks may be effective for some patients. Performing a greater occipital block using a combination of a long acting local anesthetic and a corticosteroid may provide rapid and lasting relief for some migraine. This strategy has many proponents, though data supporting or refuting its efficacy do not exist.

Opioids

Opioids are the class of medication used most commonly to treat migraine. Though highly effective for acute pain, opioids are less desirable treatment for acute migraine for some reasons. Opioids are less effective than other treatment regimens such as the antiemetic dopamine antagonists and dihydroergotamine combinations. Opioids are associated with worsening of the underlying migraine disorder. In outpatient studies, opioids were thought to cause transformation of episodic migraine into chronic daily headaches. Therefore, based on the above concerns, a patient who presents with a migraine for the first time should never be administered opioids unless contraindications or lack of response to other medications leave no alternative.

Other treatment options

For patients refractory to the treatments listed above, other options with potential benefit include propofol, haloperidol, valproic acid, and magnesium the latter being particularly effective in treating migraine with aura.

Postdischarge treatment

Regardless of the type of treatment, most patients with acute migraine have a recurrence of pain within 48 hours. Parenteral or oral corticosteroids decrease the frequency of headache recurrence,

though the optimal dose and route of administration is not known. Oral naproxen sodium, sumatriptan, or a combination of both (e.g. combination oral tablet or a triptan taken along with naproxen sodium) are comparably effective in treating headache recurrence post discharge. Because the two medications performed equally well in treating headache recurrence, physicians can choose between the two based on issues related to medication contraindications, cost, and patient preference.

Migraine when pregnant or breast feeding

About 2 in 3 women with migraine have an improvement while pregnant or breast feeding. However, about 1 in 20 women with migraine find that their migraine gets worse when pregnant. The bad news is that many of the medicines used to treat migraine should not be taken by pregnant or breast feeding women. For relief of a migraine headache paracetamol is the medicine most commonly used, as it is known to be safe during pregnancy. Ibuprofen is sometimes used but do not take it in the last third of the pregnancy (the third trimester). Aspirin should be avoided if anyone is trying to conceive, early in pregnancy, in the third trimester and while breast feeding. Triptans should not be taken by pregnant women and breast feeding mother at all. Medicines used for the prevention of migraine are not recommended for pregnant or breast feeding women.

Conclusion

Once it has been determined that a patient suffers from a primary headache disorder, it is not always relevant or necessary to determine from which headache subtype a patient suffers prior to treatment because most types respond to acute treatment. Multiple regimens have been shown effective for the treatment of acute migraine. Emergency physicians can choose a therapy based on medication availability, provider comfort with the medications, and patient comorbidities. Opioids should almost never be used as initial treatment in patients presenting with migraine because they are less effective than other medications and may worsen the underlying migraine disorder. Once the acute pain is resolved, the patients should administer corticosteroids and then naproxen or a triptan (or a combination therapy) in the event of rebound headache.

- References:**
1. *Ann. J. Emerg. Med.* 2002;39(3):215-222
 2. *Neurology* 2005; 64 (3):463-468
 3. *BMJ* 2008;336 (7657):1359-1361

Answer 1



A plantar fibroma is a benign nodule of unknown etiology affecting the arch of the foot. Most cases are nontraumatic and originate in the deep fascia of the foot abutting the muscle. Lesions are firm and may be painful upon application of pressure. Most instances are solitary; multiple lesions may be hereditary and with variable penetrance. Initial management of symptomatic fibromas consists of off loading with shoe padding or custom inserts, along with NSAID therapy to reduce inflammation. Intralesional steroid injections may also be beneficial in the initial stages. Due to the high incidence of recurrence, surgery is usually reserved for refractory cases.

Reference: Emrg. Med. February 2014, Vol. 46, No. 2, p: 81-82

Answer 2

Dermatitis herpetiformis (DH) is an autoimmune disorder linked to the ingestion of gluten and is associated with gluten-sensitive enteropathy (celiac disease). The condition is associated with human leukocyte antigens DQ2 and DQ8, the highest prevalence of which is seen in men of Northern European descent. Patients with DH develop intensely pruritic papules and vesicles of the extensor surfaces, scalp, and buttocks after ingesting gluten. Biopsy of these lesions reveals IgA deposits. A strict gluten free diet is the cornerstone of therapy, though adherence often proves difficult for many patients. Dapsone provides rapid relief of pruritus and skin lesions.



Reference: Emrg. Med. February 2014, Vol. 46, No. 2, p: 81-82

Answer 3



Steroid induced facial dermatitis manifests as an eruption of papules and pustules on an erythematous scaling base classically involving the nasolabial folds and perioral area. A clear zone may be present around the vermilion border. This rash is caused by prolonged treatment of blemishes or rashes with mid to high potency topical corticosteroids. During treatment, the complexion initially improves but then gradually worsens. Upon discontinuation of corticosteroid therapy, a rebound flare ensues, often triggering resumption of the precipitating medication. Management is difficult, though most cases respond to substitution with a low potency corticosteroid followed by application of either pimecrolimus or a sulfur containing lotion.

Reference: Emrg. Med. December 2013, Vol. 45, No. 12, p: 31-32



Posterior shoulder dislocations

A posterior shoulder or glenohumeral dislocation is the posterior displacement of the humeral head relative to the glenoid. The anterior humeral head is typically impacted on to the glenoid rim, so patients may present with limited range of shoulder motion. Posterior shoulder dislocations are classified as acute if identified within three weeks of injury and chronic afterwards. Chronic posterior shoulder dislocations are often less painful and have a greater range of motion than acute posterior dislocations.



Mechanism

Typically the humeral head is forced posteriorly in internal rotation while the arm is abducted (Figure 1). In adults, convulsive disorder is the most common cause. Electrocutation is a classic but uncommon cause of posterior shoulder dislocation. In both situations bilateral dislocations are not infrequent. Occasionally, they can be the result of strength imbalance within the rotator cuff muscles. Posterior dislocations may even go unnoticed, especially in elderly patients.

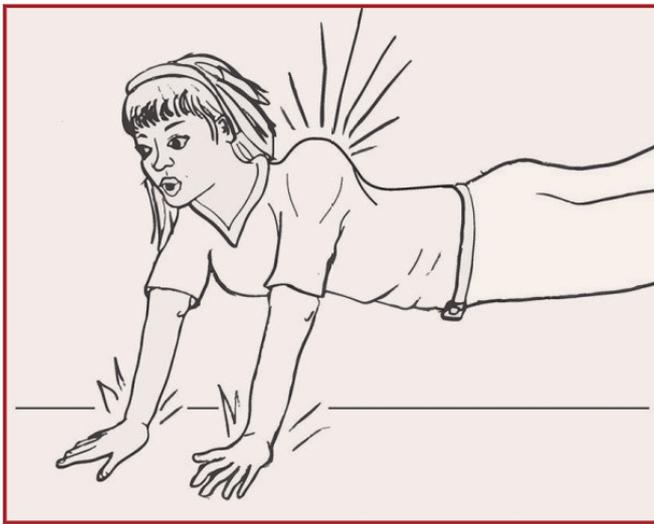


Figure 1: Diagram of mechanism of posterior dislocation: arm flexed and adducted, with internal rotation at the shoulder

How common are posterior shoulder dislocation

The glenohumeral joint is the most commonly dislocated joint in the body, and posterior shoulder dislocation comprises 2-4% of all shoulder dislocations. In an audit of 120 dislocations, posterior shoulder dislocations were seen most often in men aged 20-49 years, and the most common causes were traumatic events (67%) and seizures (31%).

Reason of missing diagnosis

The diagnosis is often missed initially delayed diagnosis occurs in

50-79% of patients. Delay can result from the clinician or patient (or both) deeming the mechanism of injury insufficient to cause dislocation or subtle clinical examination findings relative to anterior dislocation. Patients often have enough motion in the joint and minimal palpable humeral displacement to confound a diagnosis of dislocation. Inadequate initial imaging increases the chances of missing the diagnosis. Often, only an anteroposterior view of the shoulder is ordered, without an orthogonal one; in such circumstances a posterior dislocation can look normal (Figure 2). A dedicated protocol for shoulder injury that includes an orthogonal view significantly reduces the rate of missed diagnoses (Figure 3).

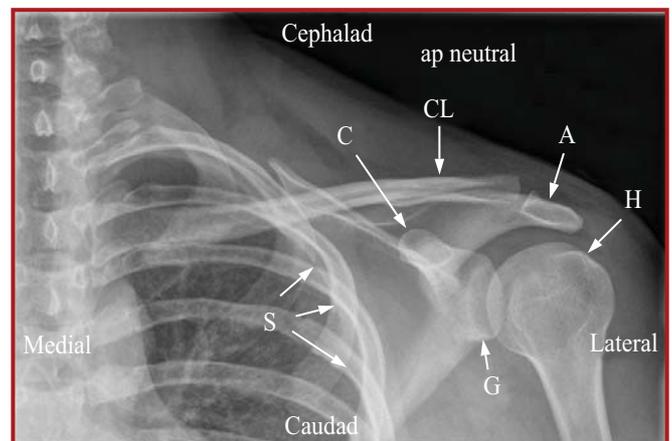


Figure 2: Pre reduction anteroposterior radiograph of left posterior dislocation. The humeral head (H) appears to be concentrically located about the glenoid (G) and beneath the acromion (A). Slight internal rotation is present when appreciating the greater and lesser tuberosities. No fracture is seen. C=coracoid process, CL=clavicle, S=scapula

Effects

A delay in diagnosis can result in serious morbidity because posterior dislocation often produces an impression fracture on the anterior aspect of the humeral head (reverse Hill-Sachs lesion; Figure 4). The fracture can enlarge and propagate with prolonged dislocation while damaging the articular cartilage. This may lead to



osteoarthritis and eventual avascular necrosis from impaired blood flow to the humeral head. Early diagnosis reduces the risk of these complications and decreases the likelihood of needing a subsequent shoulder arthroplasty.

Diagnosis

The key to accurate and timely diagnosis is to maintain a high index of suspicion, based on mechanism of injury, and to perform appropriate diagnostic imaging. Clinical diagnosis is challenging, although specific history and physical examination findings

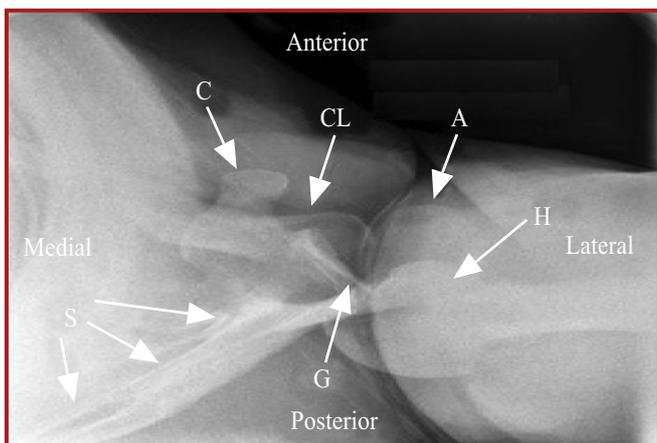


Figure 3: Pre reduction axillary radiograph of left posterior shoulder dislocation. The humeral head (H) is clearly seen posterior and impacted on the glenoid (G). The scapular body (S) and coracoid process (C) can also be identified. The lateral aspect of the clavicle (CL) and acromion process (A) are immediately anterior to the humeral head.

increase the likelihood of identifying this injury. The most common mechanisms are indirect trauma, with the shoulder in a position of flexion; adduction and internal rotation, with a coaxial force applied on the arm; or extreme muscular contraction, such as seizure or electrocution. Patients typically hold the affected shoulder in adduction internal rotation. They may have a mechanical block to external rotation, often with severe pain if the injury is acute. An abnormal shoulder contour with a prominent coracoid process anteriorly and a palpable posterior positioned humeral head may be present, but the findings are often subtle.

Posterior dislocations are often associated with other shoulder injuries, including fractures (34%), reverse Hill-Sachs injuries (29%), and rotator cuff tears (2-13%). At least two orthogonal views

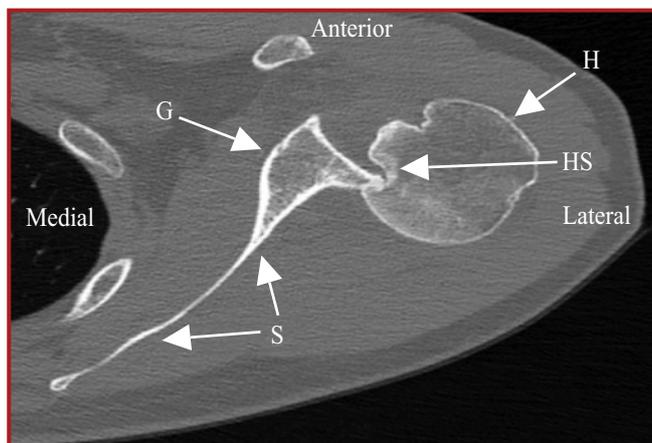


Figure 4: Pre reduction axial computed tomogram of the left shoulder. Note the reverse Hill-Sachs impaction lesion (HS) to the anteromedial humeral head (H). G=glenoid, C=coracoid process, S=scapula

(anterioposterior plus axillary, Velpeau, or scapular Y) are needed to exclude a posterior dislocation. The axillary view may require painful positioning, and antecedent analgesia or use of a curved film cassette may help. The combination of anteroposterior and Velpeau views as part of a shoulder trauma series results in an 89% detection rate of traumatic posterior shoulder dislocation. Point of care ultrasound can also diagnose these injuries at the bedside, although extra training is needed and results are operator dependent.

Management

Once identified, refer these dislocations to an emergency department for prompt reduction under adequate muscular relaxation. Deep procedural sedation, with airway monitoring, may be needed. Computed tomography may be needed in the emergency department to diagnose non displaced fractures or further define fractures that could become greatly displaced with attempted closed reduction. Prevention of further injury helps reduce morbidity from these injuries many will not require operative fixation and will be able to be managed with sling immobilization. Table 1 shows the treatment options.

Table 1: Treatment of posterior shoulder dislocation

Non operative treatment	✓ Acute reduction and immobilization in external rotation for 4 to 6 weeks
Operative treatment	✓ Open or arthroscopic posterior labral repair (Bankart) and capsular shift
	✓ Hemiarthroplasty
	✓ Total shoulder arthroplasty

Reference : 1. BMJ 2015; 350,h75 (Published 28 January 2015)
2. Orthobullets.com



Refresh your memory

Please select the correct answer by (✓) against a, b, c, d, e of each question in the Business Reply Post Card and sent it through our colleagues or mail within 17 May 2015; this will ensure eligibility for the Raffle Draw and the lucky winners will get attractive prizes!

- 1. Which dietary substrate is broken down into glucose and galactose by the action of intestinal enzymes?**
 - a. Fructose
 - b. Lactose
 - c. Maltose
 - d. Mannose
 - e. Sucrose
- 2. A 46 year old man presented within 1 hour of ingesting 40 tablets of slow release theophylline. What is the most appropriate initial management?**
 - a. Activated charcoal
 - b. Alkaline diuresis
 - c. Gastric lavage
 - d. Observation only
 - e. Whole bowel irrigation
- 3. On removal of the renal arterial clamp following donor kidney transplantation, the surgeon noted changes suggestive of hyperacute rejection. Which immunoglobulin is likely to be responsible?**
 - a. IgA
 - b. IgD
 - c. IgE
 - d. IgG
 - e. IgM
- 4. A 50 year old woman presented with a 24 hour history of palpitations. An ECG revealed atrial fibrillation with a ventricular rate of 130 beats per minute. Which drug is most likely to restore sinus rhythm?**
 - a. Adenosine
 - b. Bisoprolol
 - c. Digoxin
 - d. Flecainide
 - e. Verapamil
- 5. A 27 year old man was referred with an acute hepatic illness. Which laboratory finding would indicate the need for inpatient management?**
 - a. Aspartate aminotransferase:alanine aminotransferase ratio >1.0
 - b. Prothrombin time 24 s (11.5-15.5)
 - c. Serum alanine aminotransferase 1400 U/L (5-35)
 - d. Serum alkaline phosphatase 1800 U/L (45-105)
 - e. Serum conjugated bilirubin 110 $\mu\text{mol/L}$ (<3.4)
- 6. A 32 year old man was treated with combination chemotherapy for testicular cancer. Subsequent investigations confirmed a complete clinical remission. What is the dominant cellular process that explains why this therapy was successful?**
 - a. Apoptosis
 - b. Differentiation
 - c. Mutagenesis
 - d. Necrosis
 - e. Senescence
- 7. Herpes simplex infection:**
 - a. Is commonly associated with carcinoma of the uterus
 - b. May cause Kaposi's varicelliform eruptions
 - c. May cause keratoconjunctivitis
 - d. May cause subacute sclerosing panencephalitis
 - e. May cause acute gingivostomatitis
- 8. Which of the following conditions or drugs inhibit uric acid reabsorption?**
 - a. Low dose salicylate
 - b. Hyperlactacidemia
 - b. Phenylbutazone
 - d. Dicoumarol
 - e. Probenecid
- 9. A 45 year old man presented with recurrent epistaxis. Examination revealed telangiectasia on his lips and in the mouth. A diagnosis of hereditary haemorrhagic telangiectasia was made. What is the most likely mode of inheritance?**
 - a. Autosomal dominant
 - b. Autosomal recessive
 - c. Mitochondrial inheritance
 - d. Sporadic mutation
 - e. X-linked recessive
- 10. Which of the following may cause pain in the heel?**
 - a. Ankylosing spondylitis
 - b. Kohler's disease
 - c. Rheumatoid arthritis
 - d. Prolonged diazepam therapy
 - e. Gonococcal infection



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