

Emergency surgical conditions in the tropics, ulcers and bites

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Emergency surgical conditions in the tropics

- Generalized peritonitis is a common surgical emergency
- In a certain research in India, a total 155 cases of generalized peritonitis:
- The most common cause of peritonitis was peptic ulcer perforation
- Typhoid perforation was the second most common cause.

Emergency surgical conditions in the tropics

- Appendicular perforations were less common than in the west but the clinical picture was the same.
- Tubercular perforations were not uncommon with a previous history of subacute intestinal obstruction and evidence of tuberculosis on chest X-ray suggesting the diagnosis.
- Ruptured amoebic liver abscess - the most common hepatobiliary cause of generalized peritonitis.

Perforated peptic ulcer

- PUD may produce one of the 3 main complications
 - Haemorrhage (15-20%)
 - Perforation (5-10%)
 - Obstruction (5%)
- These can develop without any premonitory symptom

Presentation

- Acute abdominal pain,
- The classic presentation - a prodrome of gnawing abdominal pain for hours to months prior to perforation.
- associated with
 - tachycardia,
 - tachypnea,
 - and hypotension.
- Occasionally, GIT bleeding at the time of perforation.

Physical examination

- Fever, patient lies immobile, occasionally with the knees flexed.
- Bowel sounds are usually absent,
- diffuse tenderness (boardlike).
- Rarely, pain may be located in the RLQ as enteral contents pool in the right gutter, confused with appendicitis

Investigations

- Elevated white blood count
- Elevations in serum amylase,
- Upright abdominal x-ray shows free abdominal air in approximately 70% of cases.
- abdominal USS
 - If a perforation seals quickly, patients may seek medical attention only after a localized intra-abdominal abscess develops

Operative Management

- >95% require emergent operative intervention.
 - preoperative management
 - adequately hydration
 - broad-spectrum antibiotics
 - closure of the ulcer, the
 - definitive ulcer operation, and
 - appropriate postoperative management.
 - IV H2 antagonist is routine but has little or no benefit in patients who receive definitive ulcer operation.
 - 2% mortality reported

Appendicular perforations

Appendicular perforations

- Occurs as a complication of acute appendicitis
 - Appendicular perforation
 - Appendicular mass (phlegmon)
 - Appendicular abscess
- Causes:
 - Late presentation
 - Delay in diagnosis due to

Appendicular perforations

- Appendicitis in infants and young children is difficult to diagnose preoperatively, since these patients cannot provide a history.
- It is unusual to make a firm diagnosis in a patient under the age of 1 year unless perforation has occurred.
- Acute appendicitis during pregnancy especially the third trimester, the uterus is rapidly enlarging and causes displacement of the caecum and appendix into the right upper abdomen.

Appendicular perforations

- In elderly, classic sx of pain, anorexia and nausea are present but less in less pronounced form.
- Rigidity of the RLQ is not so pronounced in elderly pts due to lax abdominal wall.
- Misdiagnosed as subacute intestinal obstruction.
- To worsen the condition, enema may be given

Treatment of appendicular perforation

- Immediate laparotomy and drainage, débridement of the necrotic tissues
- Appendectomy is avoided as faecal fistula may occur
- Broad spectrum antibiotics

Typhoid perforation

Typhoid perforation

- Usually seen in the third week of infection with salmonella typhi in patients with acute disease
- Rarely seen in Europe or North America
- Endemic in regions with poor hygienic conditions and water contamination,
 - India, Pakistan and countries in South America and Africa

Typhoid perforation

- Typhoid bacilli penetrate the Peyer's patches of the intestine wall, mainly in the distal ileum.
- These collection of lymphoid cells hypertrophy, leading to haemorrhage and then perforation
- Perforation often is not appreciated in an already severely diseased patient
- Superinfection resulting from leakage of intestinal bacteria leads to the full-blown suppurative bacterial peritonitis

Treatment:

Typhoid perforation

- Surgical excision, suture of the perforation and lavage and draining of the abdominal cavity.
- TMP/SMX, chloramphenicol or ciprofloxacin for uncomplicated typhoid, in
- Patients with peritonitis cephalexin + metronidazole

Typhoid perforation

- Factors affecting mortality and morbidity
 - the age of the patient,
 - duration of perforation before surgery,
 - presence of additional complications,
 - massive rectal bleeding,
 - extent of the surgery
 - the number of perforations present.

Ruptured amoebic liver abscess

- Amoebic liver abscess is the commonest extra intestinal manifestation of amoebiasis.
- Intraperitoneal rupture of liver abscess and fulminant necrotizing amoebic colitis are rare occurrences which complicate a severe form of invasive disease caused by *Entamoeba histolytica*

Ruptured amebic liver abscess

- Clinical picture is that of the bacterial peritonitis

Treatment – Ruptured amebic liver abscess

- surgical drainage
- application of the general principles of treating peritonitis
- Metronidazole in combination with a 3rd generation cephalosporin

Ulcers

Tropical ulcers (tropical phagedenic ulcers)



- These were once common over most of the tropics,
- There is some disagreement as to what causes them.
- Start as small infected cuts from the sharp grasses of bush paths, which would explain their characteristic distribution
- Primarily infective?
 - sometimes occur in small epidemics in the wet season.

Tropical ulcers development

- Stage One.
 - A pustule, or neglected cut, containing Vincent's and fusiformis organisms (both are penicillin-sensitive).
 - This stage is not seen in hospital.
- Stage Two.
 - Progression of the cut or pustule to form an acutely painful ulcer with a raised, thickened, and slightly undermined edge.
 - This ulcer grows rapidly for several weeks.
 - A bloody discharge covers the grey slough on its floor, the skin around it is dark and swollen, and muscle, bone, and tendon occasionally lie exposed in its base.
 - After about a month, the pain, swelling, and discharge improve, and it either heals, or it goes on to the next stage.
- Stage Three.
 - **It becomes chronic, and resembles any other long-standing indolent ulcer.**

Tropical ulcers development

- In Stage Two, when an ulcer is still less than 5 or 6 cm, penicillin and dressings will usually cure it.
- Osteomyelitis is rare, but a reactive periostitis may in time raise an ulcer above the surrounding skin.
- Sometimes its edge is thickened and everted, and resembles a carcinoma.



DIFFERENTIAL DIAGNOSIS

- The site of a tropical ulcer is its most important diagnostic feature.
- The differential diagnosis includes:
 - a chronic non-specific ulcer,
 - a squamous cell carcinoma, which resembles a chronic tropical ulcer in that it also has an everted edge
 - Tuberculous ulcer (unusual)
 - a ragged, shallow ulcer, with bluish overhanging edges.
 - Its base is less vascular, and more fibrous.
 - Buruli ulcer (restricted areas only)
 - an otherwise fit child, or young adult, with a huge ulcer with deeply undermined edges, anywhere on the body, and not necessarily on the feet and lower legs

TREATMENT:

Acute Ulcers

- Clean with saline soaks, dressing each day and keep it moist.
- Penicillin – an antibiotic of choice.
- When the ulcer is clean, usually within 7 days, and if it is 5 cm in diameter, split skin grafting.
- Smaller ulcers will heal without grafting.
- **MOST GRAFTING SHOULD BE DONE AT THE ACUTE OR SUBACUTE STAGE**

TREATMENT:

Chronic Ulcers

- Split skin grafts do not take well on long-standing fibrotic ulcers, or they may take initially, and break down later.
- Ideally, these ulcers need a muscle, or a myocutaneous flap.
- Chronic ulcers cause long standing morbidity, and may become malignant
- Recurrence rate is high after STSG.

DIFFICULTIES WITH TROPICAL ULCERS

- SQUAMOUS CELL CARCINOMA (epithelioma) development
 - after many years, the BASE OF AN ULCER BECOMES HEAPED UP and irregular, and its edges protuberant and rolled
- This can happen in three years, or it can take thirty.

Buruli ulcer

- Caused by infection with *Mycobacterium ulcerans*,
- Is one of the most neglected *but treatable* tropical diseases.
- Reported in over 30 countries mainly with tropical and subtropical climates but it may also occur in some countries where it has not yet been recognized



Buruli ulcer

- As the lesion grows, the skin over it desquamates, becomes pigmented, and then breaks down to form a chronic expanding ulcer, with a necrotic base, and edges which may be undermined 5 to 15 cm.
- Secondary infection occurs, and a foul slough forms.
- Some ulcers remain unchanged for weeks; others cover much of a limb, or the trunk, in a few weeks.
- Heal spontaneously, with much scarring and severe contractures.

TRANSMISSION

- The exact mode of transmission is still under investigation.
- Some patients state that lesions develop at the site of antecedent trauma.
- Research suggests that in Africa, some aquatic insects of the order *Hemiptera* (Naucoridae and Belostomatidae) can harbour *M. ulcerans* in their salivary glands and transmit the disease to experimental animals.

TRANSMISSION

- More recent data from Australia suggest that salt marsh mosquitoes test positive for *M. ulcerans* DNA, although transmission by this type of mosquito has not been established.
- Further research is in progress to establish the exact role of insects and other factors in the transmission of the disease to humans.
- If confirmed, BU will be the only known mycobacterial disease to be transmitted by insects.

EPIDEMIOLOGY

- BU frequently occurs near water bodies – slow flowing rivers, ponds, swamps and lakes; cases have also occurred following flooding.
- Activities that take place near water bodies, such as farming, are risk factors, and wearing protective clothing appears to reduce the risk of the disease.
- All ages and sexes are affected, but most patients are among children under 15 years.

EPIDEMIOLOGY

- About 90% of cases the lesions are on the limbs, with nearly 60% of all lesions on the lower limbs.
- Unlike TB, there is no evidence to suggest that infection with the HIV predisposes individuals to BU infection.
- There is also no evidence that the disease can be transmitted from person to person.
- There is little seasonal variation in the incidence of the disease.

Prevalence



- In Côte d'Ivoire, 24 000 cases recorded between 1978 and 2006.
- In Benin, nearly 7000 cases recorded between 1989 and 2006;
- In Ghana >11 000 cases recorded since 1993.
- In Australia, more cases of BU are being reported recently – 25 in 2004, 47 in 2005 and 72 in 2006.
- Increasing number of cases are being reported from Cameroon, Congo, Gabon, Sudan, Togo and Uganda.

Buruli ulcer

SIGNS AND SYMPTOMS



- Common on children, and in some areas women,
- Presents with a painless, small, well demarcated, indurated swelling, attached to the skin, but not to deeper tissues.
- It is almost always single and on the limbs
- It is often near a joint, although the site is more variable in young children.

Buruli ulcer

SIGNS AND SYMPTOMS



- There is little pain or tenderness, little or no fever
- The regional lymph nodes are not enlarged.
- Sometimes, bone is affected causing gross deformities.
- Without treatment, massive ulcers result, with the classical, undermined borders.

DIAGNOSIS

- Suggested by
 - the appearance of the swelling and the ulcer,
 - the absence of lymph node enlargement, and
 - the failure to respond to tropical ulcer therapy.
- **SPECIAL TESTS.**
 - AFB in the chronic phase of the ulcer, and culture.
 - *M. ulcerans* grows on the media used for *M. tuberculosis*
 - Direct smear examination

THE DIFFERENTIAL DIAGNOSIS

- In the nodule stage includes:
 - boils,
 - foreign body granulomas
 - low-grade fibrosarcomas.
- In the ulcer stage it includes:
 - tropical,
 - mycotic,
 - parasitic, and
 - malignant ulcers.

TREATMENT

- Current recommendations:
- A combination of rifampicin and streptomycin/amikacin for weeks as a first-line for all forms of the active disease.
- Nodules or uncomplicated cases can be treated without hospitalization.
- Surgery to remove necrotic tissue, cover skin defects and correct deformities.
- Interventions to minimize or prevent disabilities.

TREATMENT

- Excise early lesions, if possible with primary closure (unlikely).
- In ulcerated lesion, control pyogenic infection with antibiotics, and irrigate with saline.
- Excision of all diseased tissue, and skin graft.
- Failure to remove all diseased tissue, the graft will fail, and healing will be slow, with much scarring.

Bites

MAMMALIAN BITES

- Worldwide, thousands of people are killed each year, primarily by large animals such as lions, buffaloes and tigers
- Many victims with minor injuries from animal bites do not present for treatment, so the actual incidence is unknown.
- In Ifakara, several cases attended every year with such injuries

Evaluation

- Patients, especially children, are at risk for blunt and penetrating trauma.
- Teeth and claws can puncture body cavities, including the cranium, and amputate extremities.
- Patients should be treated as trauma victims, with special attention to wound management

Evaluation...cont.

- X-rays for suspected fractures, joint penetration, severe infections, and foreign bodies such as teeth.
- Abdominal USS – visceral injuries
- Tetanus prophylaxis should be current.

Crocodiles bites

- Crocodiles can attain a length of more than 20 feet and travel at speeds of 20 miles per hour in water and on land.
- Attack primarily in shallow water.
- Most injuries occur to the lower extremities.
- Powerful jaws and sharp teeth produce crushing, tearing injuries.

Crocodiles bites

- Hypovolemic shock and near drowning are life-threatening consequences of an attack.
- Other complications:
 - soft tissue and neurovascular damage,
 - fractures
 - infection.
- Massive transfusions are frequently necessary, predisposing the patient to DIC.
- Most wounds require exploration and repair in the operating room

Bites-General Management

- Initial management is focused on airway, breathing, and circulation.
- Patients with extensive blunt and penetrating injuries should be treated as major trauma victims.
- Tetanus status should be updated for all bites and cuts.
- Radiographs to locate foreign bodies and fractures.

Wound Care

- Meticulous wound care is necessary to prevent infection and to optimize aesthetic and functional outcome.
- Wounds should be irrigated with normal saline.
- Débridement of devitalized tissue can decrease infection and promote healing.
- Large wounds should be explored in the operating room.
- Wounds should be loosely closed and drainage provided.

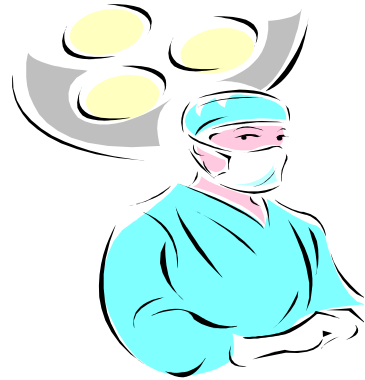
Wound Care...cont.

- Options available for repair include primary, delayed, and secondary closure.
- The appropriate method is determined by the anatomic location of the bite, the source of the bite, and the type of injury.
- Contrary to past beliefs, primary closure of selected bites produces the best outcome for patients without increasing the risk of infection.
- This is especially true for head and neck wounds, where aesthetic results are more important.
- Healing by secondary intention generally produces unacceptable scars.

Wound Care...cont.

- Cefuroxime, cloxacillin+metronidazole or amoxicillin-clavulanic acid is acceptable for all bites
- Antibiotics should be administered early and, in serious bites, be given parenterally.
- Cultures for infected wounds that fail antibiotic therapy

Thank you



for

listening!!!