Life-threatening Streptococcal Myonecrosis Complicating Primary Wound Closure after Pilonidal Sinus Excision

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SUMMARY: We describe a case of anaerobic streptococcal myonecrosis as a rare complication after pilonidal sinus excision with primary closure. The recognition of the disease in any patient who has early septic deterioration after a surgical procedure requires aggressive management for survival.

Introduction

Most reports have described the polymicrobial nature and predominance of anaerobic bacteria in infected pilonidal sinuses (1, 2). However, anaerobic infections as secondary complications of surgical procedures for pilonidal sinuses are uncommon entities. In general, their pathogenesis involves a complex of factors, such as the virulence of the invading organisms, the state of the host's defenses, devitalized tissue and/or a cavity creating an anaerobic environment, and foreign body. Many of these factors can be implicated after excision of a pilonidal sinus with primary closure.

The purpose of this report is to illustrate the clinical and pathological findings of anaerobic streptococcal myonecrosis following pilonidal sinus excision with primary closure. We have not come across any report in the available literature and this has prompted us to describe this case.

Case report

Six days before admission to our institution, a 19 year old female was admitted to another hospital with 18 months history of sacrococcygeal pilonidal sinus and repeated foul odour secretion. At operation 5 x 3 centimetres pilonidal sinus was excised with primary closure of the cavity and tube drainage. The postoperative course was uneventful for 5 days, at which time fever and pain in the wound area developed. Re-exploration revealed induration of the area and 20ml of foul-smelling purulent material was evacuated; the wound was left open. On the next day patient's condition deteriorated with hypotension fever and impaired consciousness. The patient was prepared for emergency wound revision, at which the subcutaneous tissue was seen to be oozing. The

fascia and gluteus group were necrotic and filled with pus. Wound debridement and resection of the necrotic muscle was performed. An anaerobic infection was suspected and the periwound area was deeply incised. In view of the severity of the patient's condition which did not respond to an initial period of treatment, she was transferred at the 8th postoperative day to the Military Medical Academy by use of helicopter service.

On admission the examination revealed a lethargic young female with signs of multi-organ-system dysfunction. Her temperature was 40°C, pulse rate 130 beats/minute, respiratory rate 26 breaths/minute, and blood pressure 90/60 mm Hg. Her tongue was furred and her liver palpable to two centimetres below the right costal margin. In the area involving the natal crease from the broad triangular area over the upper part of the sacrum, down to some 2.5 to 3.0 centimeters from the anus and buttocks, a 50 x 23 centimeters brown-greenish irregular wound was seen. The gluteal muscles gave a sweet but foul odour and gas bubbles were visible in the discharge. Crepitus was present in the periwound area.

The admission laboratory test revealed the following values: hematocrit - 0.33, WBC count - $6.0 \times 10^9/L$, blood urea - 29.3 mmol/L, SGOT - 254 U/L, SGPT - 48 U/L.

Chest X-Ray was normal. Material obtained by needle aspiration in the wound region revealed large gram positive cocci, which later proved to be *Peptostreptococcus*. In addition *Staphylococcus faecalis*, *Staphylococcus epidermidis* and *Proteus mirabilis* were present.

A diagnosis of anaerobic streptococcal myonecrosis was made and the patient was treated accordingly. She was admitted to the Intensive Care Unit where nutritional

support and penicillin therapy was started together with repeated wound packing and debridement.

On the 10th postoperative day the infection was noted to be extending laterally and deeply down the right sciatic nerve (Fig 1). The patient developed symptoms of classic sciatica, with pain radiating down the back of the leg aggravated by dorsiflexion and muscle weakness. Subsequently, culture specimens of pus and muscle grew the same organisms. Culture of blood grew *Serratia marcescens*, a fact that required further change in antibiotic therapy.

Fig 1. View on the 10th postoperative day shows extent of spread of anaerobic streptococcal myonecrosis laterally and deeply down the right sciatic nerve.

The patient was returned to the operating room on five occasions over the next several days for dressing changes with whirlpool baths and further debridement of obviously necrotic muscle. Hyperbaric oxygen therapy as an additive treatment was begun because of extensive involvement of the sciatic area where adequate debridement was difficult. Two weeks later good granulation tissue was present. After excision, the wound was sutured and partially closed. A skin defect remained of 100cm² at the left and of 200cm² on the right. One month later the second stage of plastic reconstruction was performed. The postoperative course was uneventful and patient was discharged 79 days after the initial operation.

At follow-up 12 months later, the patient was entirely free of local and neurologic symptoms, and was 32 weeks pregnant.

Discussion

Anaerobic streptococcal myonecrosis is a rare condition, usually accompanied by severe systemic toxicity and easily mistaken for clostridial gas gangrene. The correct diagnosis is reached after the recovery of peptostreptococci of anaerobic culture. Typically, infection followed deep penetrating wounds, but sometimes involvement of the soft tissues may follow

surgical procedures, ischaemia, or animal or human bites (3). Anaerobic streptococcal myonecrosis is usually associated with a mixed flora, arising from endogenous or exogenous contamination of a wound. The polymicrobial nature of infection is reportedly demonstrated in 76% of cases (4).

The case we have reported illustrates many of the characteristic manifestations of anaerobic streptococcal myonecrosis. We believe, the key to successful treatment is to recognize the urgency. The presence of gas is thought to be due to anaerobic infection but in fact awaiting bacterial identification could lead to delay in management. Most authors recommend limited surgical interventions combined with administrations of antibiotics with rapid clinical improvement after the onset of appropriate therapy (5-7). In several cases fluid resuscitation and cardio-respiratory stabilization is essential. If the spread of the infection could not be arrested, repeated inspections and debridement are necessary (8). Hyperbaric oxygenation may have value as an additive treatment but should not replace surgical debridement, local oxygen therapy with irrigation of the wound with hydrogen peroxide and antibiotic therapy (3,9).

We conclude, that the invasive nature of this anaerobic streptococcal myonecrosis, defined the condition as having a potentially rapid lethal course. Therefore, the disease required early suspicion, recognition and appropriate management with both systematic and local treatment, in addition with hyperbaric oxygenation.

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