Necrotizing Crepitant Fasciitis of Abdominal Wall Following Caesarean Section

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Introduction

Caesarean section is a safe mode of delivery owing to improvement in anaesthetic and surgical technique but there is an increased risk of postpartum complications following caesarean delivery[1]. Morbidity figures between 6-65% have been reported[2,3] with wound infection as a major contributory factor. With the frequent use of prophylactic short term antibiotics serious wound infections are rare, but they still occur as seen in this report. Necrotizing fasciitis is a rare life threatening wound infection which requires prompt recognition and treatment. It is a polymicrobial infection that mainly involves the fascia and spreads very rapidly along the relatively ischemic fascial planes with wide spread undermining of surrounding tissue and extreme systemic toxicity. There is generalised thrombosis of the penetrating vessels causing devascularization of the skin. The diagnosis should be suspected when a wound margin looks dusky and necrotic in a seriously ill patient.

Case Report

A twenty-four year old primipara was referred to DHQ Hospital, Faisalabad from a general practitioner clinic with a five days history of caesarean section and high grade pyrexia. Detailed notes were not available but on specific interrogation the patient laboured at home for more than twelve hours with history of several vaginal examinations by the traditional birth attendant. Thereafter, she was taken to private general practitioner's clinic where caesarean section resulted in delivery of a good sized still born male infant. Surgery lasted for more than two hours during which five units of fresh blood were transfused. The immediate postoperative period was complicated by high grade fever and abdominal distension. On examination the patient looked flushed and distressed with a temperature of 103°F. Abdominal examination revealed a midline vertical incision. There was marked swelling around the wound and the skin around the wound looked dusky red without any distinct margins. Soft tissue crepitation was discovered in the lower half of the wound on both sides and the area around the crepitus was very painful. For presumed clostndial infection benzyl penicilli 40 lac units four hourly was used intravenously. In addition gentamicin 80 mg 8 hourly intramuscularly and metronidazole infusion were started. On removal of stitches copious amount of foul smelling seropurulent discharge came out which was sent for culture. Wound was bathed in hydrogen peroxide. Surgical advice was sought and anti gas gangrene serum was given. Twenty-four hours later the patient felt better, fever lessened. Hemorrhagic bullae involving the skin and crepitus was seen spreading laterally towards the flanks; the colour of skin looked purplish. Thorough debridement was therefore, carried out under general anaesthesia and necrotic skin margins were removed. The necrotic fascia was much more extensive than skin involvement. During debridement the fascial tissues were relatively less vascular and two pints of fresh blood were transfused during the procedure. Samples of necrotic tissue were sent for bacteriological analysis. Forty-eight hours later the crepitus on high side of abdominal wall receded but remained unchanged on left side. The report of culture sensitivity ascertained the presence of streptococci (cultures for anaerobes were not carried out due to lack of facilities). The antibiotics were switched to clindamycin and injection amikacin. Another incision into the abdominal wall was made and necrotic tissue was removed followed by a third incision two days later: There was marked improvement in

general state of the patient and the wound started granulating. Wound was resutured using prolene No.2 and the patient was discharged ten days later.

Discussion

There has been a dramatic rise in the rate of caesarean section over the past two decades4. Though changing delivery trends have resulted in improved perinatal morbidity and mortality, serious maternal morbidity can still occur[5]. Major predictors of wound infection following caesarean section include length of labour, obesity, time between membrane rupture and delivery, number of vaginal examinations and length of labour[6,7]. The incidence of post-operative infection varies with the expertise of the surgeon, pre-operative preparations and the routines followed by the surgeon Each extra hour of surgery doubles the risk of infection[8]. Systemic factors like hypovolemic shock, complicated surgery, decreased immunity and diseases like diabetes mellitus are also important Necrotizing fasciitis is a life threatening infection usually polymicrobial in nature, comprising anaerobes as well as microaerophilic, facultative anaerobic and aerobic organisms[9]. A certain type of synergy may develop between the individual organisms causing the infection. Alternatively a super infection may develop where one group (usually aerobes), creates suitable conditions for growth of a second group (anaerobes Gorbach's effect)[10]. Anaembes require a decreased oxido-reduction potential multiply which occurs during tissue hypoxia following hypovolemic shock. Anaerobic organisms cause 30% of all post- operative wound infections and more than 50% of all puerperal sepsis and include gram positive cocci (peptococci, pep to- streptococci) and gram negative anaerobic rods of the bacteroides spp and fusobacterium spp. There is a considerable lack of agreement over the terminology used to describe anaerobic soft tissue infections[11]. Necrotizing fasciitis is a clinical entity and not a specific bacterial infection which is characterized by extensive necrosis of superficial fascia with widespread undermining of surrounding tissue owing to infections/thrombosis of vessels. The term. myonecrosis is usually used to describe those infections in which muscle is involved in contrast to necrotizing fasciitis where fascia is affected. Though it is essential to avoid under estimating the severity of disease and confusing it with cellulitis, phlebitis or localized abscess, at the same time it is important not to confuse it with clostridial myositis and vascular gangrene and thereby over treat this condition. Early diagnosis can be confirmed by frozen section biopsy of wound[12]. Necrotizing fasciitis has been reported on perineum at the location of episiotomy[13,14] in the abdominal wall following caesarean section[13], abdominal hysterectomy[15], salpingectomy[16,17] and laparoscopy[18]. The therapy is based on suitable combination of antibiotics, surgical removal of necrotic tissue, rinsing with hydrogen peroxide and longitudinal facial incisions in order to lower tension in the muscle. The histologic findings indicating necrotizing fasciitis include necrosis of superficial fascia, fibrinous thrombi of the blood vessels penetrating the fascia, presence of polymorphonuclear leukocytes in the fascia and no muscle involvement. In the presented case histopathology of described tissue was not carried out due to financial reasons.

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