



CASE REPORT

Abdominoplasty as an adjunct to the management of peri-Caesarian section necrotising fasciitis

H. Schumacher, H. Tehrani, M.S. Irwin, C.M. Malata*

Department of Plastic and Reconstructive Surgery, Addenbrooke's University Hospital, Cambridge, UK

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KEYWORDS

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Summary Necrotising fasciitis is a rare but potentially lethal condition, often requiring extensive soft tissue debridement and complex reconstructive surgery. The disease has been noted to complicate Caesarian section wounds, and our department has recently managed three such patients. They all required extensive abdominal wall debridements which would traditionally be closed initially by split skin grafting. We report on the clinical course of three patients, two of whom had their defects closed successfully by abdominoplasty without recourse to initial skin grafting.

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Necrotizing fasciitis is a rare but serious condition with an incidence of 0.4 per 100 000 population and a 34% mortality.¹ The clinical picture was first described in 1871 by Joseph Jones,² a Confederate Army surgeon, referencing more than 2600 cases. It was Wilson, however, who gave the disease its name in 1952,³ recognising even at that early period that more than one particular microorganism may be accountable.

The first infective agent to be isolated from affected tissues was *beta haemolytic Streptococcus*,⁴ followed later by *haemolytic Staphylococcus* and many other microorganisms. In the majority of cases, however, the infection appears to be polymicrobial.^{5–7}

The characteristic feature of the disease is that it can affect the fascial plane in any anatomical region. The association of

necrotising fasciitis with Caesarean section was first described by Golde and Ledger in 1977.⁸ Since then Goepfert et al. have reported its incidence to be 1.8 per 1000 Caesarean deliveries, noting nine cases over an 8 year period,⁹ with Schorge et al. recording five cases over 15 years.¹⁰ These are further supported by anecdotal cases in the literature.^{8,12–15}

Our department has become involved in the reconstruction of three cases of abdominal necrotising fasciitis associated with Caesarian section, two of which had direct closure of their defects by advancement of the remaining abdominal skin, in an abdominoplasty-type fashion.

Case reports

Case 1

A 29-year-old lady had an emergency Caesarean section in the second stage of labour for failure to progress. There

* Corresponding author. Address: Department of Plastic Surgery, Box 186, Addenbrooke's Hospital, Hills Road, Cambridge CB2 2QQ, UK. Tel.: +44 1223 586672; fax: +44 1223 257177.

E-mail address: contact@charlesmalata.com (C.M. Malata).

were no intraoperative complications and following an uneventful recovery she was discharged home. One week after discharge she presented to hospital with abdominal pain, pyrexia and a discharging wound infection. Wound swab cultures grew *Streptococcus milleri* and mixed anaerobes while blood cultures yielded *Escherichia coli*. A repeat wound swab taken a few days later revealed the presence of coliforms and anaerobes, whilst the purulent wound discharge yielded gram positive organisms and *Pseudomonas*.

She developed an acute abdomen, prompting an exploratory laparotomy. This revealed purulent ascites, a perforated appendix, and necrotic lower abdominal tissue. The wound was debrided and the perforated appendix stump was oversewn. The peritoneal fluid showed gram positive cocci and mixed anaerobes on microbiological investigation.

The patient's general condition failed to improve (Fig. 1), and a CT scan performed 3 days later indicated extensive abdominal wall fasciitis (Fig. 2), requiring further extensive wound debridement of skin and fascia up to the umbilicus. Two days later the patient had a wound inspection and minor debridement by a visiting plastic surgeon (Fig. 3).

She was then transferred to the regional plastic surgery unit where she received intravenous vancomycin, ciprofloxacin, metronidazole and gentamicin on the recommendation of the microbiologists. The wound was then closed by rectus abdominis muscle approximation and mobilisation of the upper abdominal flap in an abdominoplasty-type fashion. She subsequently made an uneventful recovery, and was discharged 12 days later (Fig. 4).

Case 2

A 36-year-old gestational diabetic with a body mass index of 50 was admitted to the prenatal ward with rapidly spreading cellulitis of the anterior abdominal wall in the third trimester of pregnancy. Her past medical history included rheumatic fever as a child. She was commenced on intravenous benzylpenicillin and flucloxacillin. Clinical features were consistent with necrotising fasciitis, prompting emergency debridement in the form of an apronectomy, to allow an infection-free Caesarean section delivery of



Figure 1 Lower abdominal wall necrosis 3 days post laparotomy.

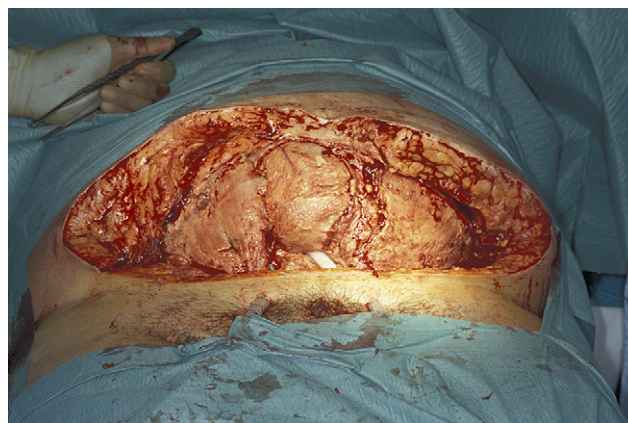


Figure 2 Skin, fat and fascia of the anterior abdominal wall debrided up to the umbilicus.

a healthy girl. The patient was transferred from the operating theatre to the intensive care unit. Preoperative swabs grew Group A *Streptococcus* and therefore histologically she had features consistent with lobular panniculitis. Intravenous benzylpenicillin and flucloxacillin were continued on microbiology advice.

A change of dressings under general anaesthesia 48 h later showed no evidence of residual infection or necrotic



Figure 3 Preoperative photograph prior to wound debridement on day 5.

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