

# An unusual case of skin necrosis due to adrenaline containing local anaesthetic

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Adrenaline is added to the preparations of local anaesthetics to serve a dual purpose: localization at the desired (surgical) site for prolonged contact; modulation of the rate of catabolism of anaesthetic to keep pace with the rate at which it is absorbed, thereby reducing the systemic side effects induced by the anaesthetic. Adrenaline when absorbed into blood stream can cause systemic toxicity. Few authors have reported in the English literature that adrenaline added to a local anaesthetic, caused delayed wound healing, tissue oedema, or ischaemic necrosis (gangrene) by increasing local tissue oxygen consumption and induction of hypoxia (due to intense arteriolar constriction) preferably in areas endowed with poor collateral circulation, viz., digits, hands or feet. We report successful management of a young woman who developed ischaemic necrosis after injection of a local anaesthetic preparation containing adrenaline. Mrs. P., female aged 28 years, para 5, underwent laparoscopic tubal sterilization on 22/07/1997 at a family planning camp organized by a team of obstetricians from Jawaharlal Nehru Hospital and Research Centre, Bhilainagar, M.P. After xylocaine sensitivity test dose, she received 10 ml of lignocaine hydrochloride and adrenaline (Gesicain 2%, adrenaline (0.0125 mg/ml); SG Pharmaceuticals, Baroda) to induce local anaesthesia.

On 15th post operative day, she was hospitalized with the complaints of local, painful swelling, discharge, discolouration, and increase in the size of operation scar of seven days duration. On general examination, patient was mildly febrile, anaemic, and normotensive. Cardiovascular system, respiratory system, and central nervous system did not reveal any abnormality. Local examination revealed: non-tender, circumscribed, 7.5 cm x 8 cm sized, necrotic area over the operation scar surrounded by healthy skin (Fig. 1). The necrotic area did not bleed on touch and was not associated with regional lymphadenopathy. Per abdomen and vaginal examination revealed no other significant findings. Laboratory investigations:



Fig 1: Photograph showing necrotic, avascular area over the laparoscopic tubal ligation scar induced by adrenaline.



Fig 2: Photograph showing healthy suture line on 8th post-operative day.

Hb 10gram/dl, TLC 8400.c.mm. (polymorphs 60%); Blood group B Rh +ve. Blood urea nitrogen, creatinine, glucose: normal values. Red blood cell for sickling test negative. Urine analysis normal. Urine culture and swab from the necrotic area did not grow any organism. Skiagram chest and electrocardiogram normal.

Debridement of the wound was done under short general anaesthesia. Scar tissue excised. Healthy wound edges were trimmed, approximated, and resutured.

She received amoxicillin, metronidazole, haematinics, antiinflammatory drugs, and supportive therapy. On 8th hospital day (day of discharge), sutures were removed and scar was found to be healthy (Fig.2). Histopathological examination of the debrided wound revealed poorly vascularized granulation tissue with necrosis and fibroblastic proliferation. After 3 months follow-up, the scar site was healthy and normal.