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Case report

Postburn perineal contractures: Case reports from a Nigerian hospital[☆]

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1. Introduction

Perineal burns and contractures are uncommon and challenging in our environment: between 2004 and 2007, 16.36% (45 of 275) of burn patients and 10% of paediatric burn patients had perineal involvement. Between November 2003 and 2008 0.87% (2 of 230) of all contracture surgeries involved the perineum. In the period a male had intrinsic contracture following electrical injury but did not request surgery. There were two cases noted in females and we here present their management.

In both females abduction was significantly limited and the external genitalia distorted, preventing coitus in one. The follow up is 20 months in one and 3 months in other following defaults. At present both are satisfied and the sexually active female has achieved coitus.

1.1. Case 1

DC a 22-year-old female had sustained full thickness flame burns involving the lower limbs and perineum at 5 years. Corrective surgery had been scheduled but she defaulted for more than 15 years on financial grounds. At presentation in November 2006 she had thigh and ankle contractures bilaterally, and skin dyschromia. Abduction was limited to 20° in each thigh, the introitus covered inferiorly, scar tissue

distorted the clitoris, and a tunnel shaped contractural band glued the labia. She had made unsuccessful attempts at coitus and was very dissatisfied with her appearance and limitation in sexual function but had no urinary problems.

In theatre on 24/11/06 under general anaesthesia with the patient catheterized and in the lithotomic position, bilateral thigh flaps and posteriorly based v-y flaps were designed (Fig. 1). Prophylactic antibiotics to cover for aerobes and anaerobes were administered. The v flap was raised, breaking up the contracting band, and dissection carried down at the subcutaneous plane to the introitus edge. The bilateral medially based thigh flaps were also raised at the subcutaneous plane completing the release of the introital contracture, and rotated downwards to lie by the labia majora and the v flap; making it a y. Full release was achieved and the flaps inset (Fig. 2a), the clitoris was also freed from the scar tissue. The secondary defects were closed directly in two layers. A single closed circuit tube drain was inserted. Colostomy was not undertaken.

The post-operative period was uneventful. Sutures were removed within a fortnight and the patient discharged and encouraged to abstain from coitus. Follow up was for 20 months. There was tightness between the introitus and anus; however she had full abduction (Fig. 2b). She is satisfied with the appearance and has had successful coitus.

1.2. Case 2

OO an 11-year-old female presented in June 2007 having sustained flame burns over a year previously and managed for 3 months in a peripheral hospital. On presentation she had bilateral thigh contractures limiting hip abduction to 10°, the anterior abdominal wall skin stretched down 12 cm below the pubic symphysis stretching the labia and displacing the external genitalia inferiorly. She also had an ulcer at the

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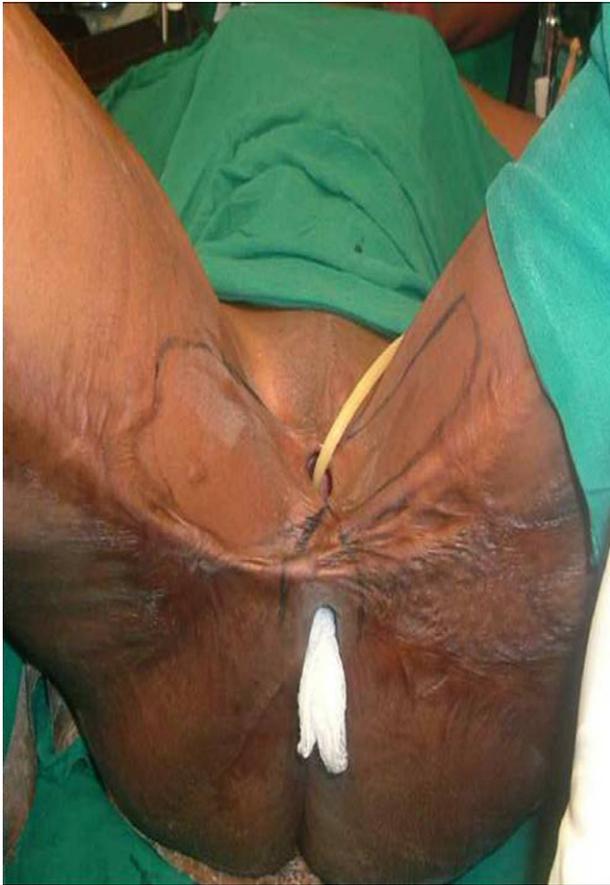


Fig. 1 – Contracture bands with flaps marked out.

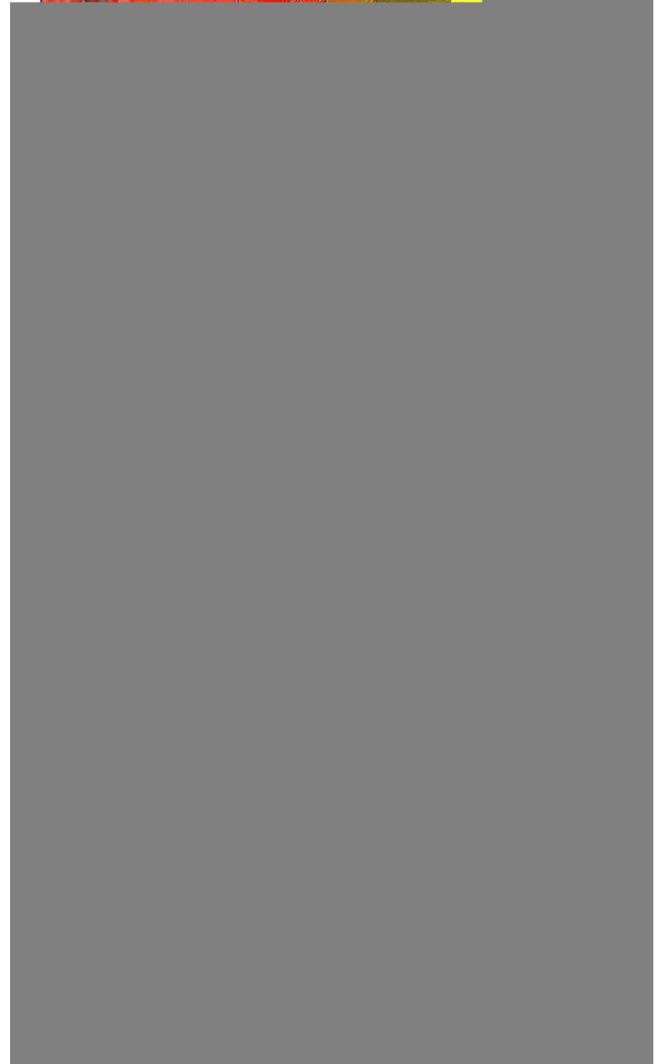
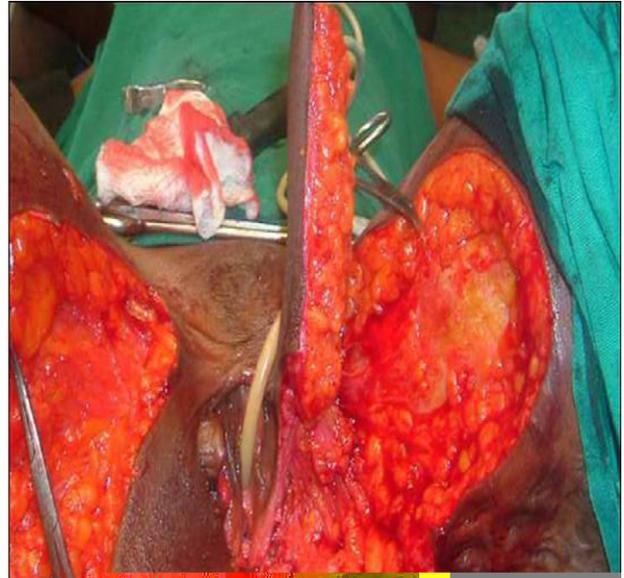


Fig. 2 – (a) Full release with flaps raised and (b) 20 months post-operatively.

summit of the unstable depigmented scar, superior labial adhesions and associated skin dyschromia (Fig. 3).

Surgery was on 27/6/2007 under general anaesthesia in a semi-lithotomy position. She was catheterized. The ulcer was biopsied, and the contracture released by a curvilinear incision extending up to the pubic symphyseal area. The labia were then elevated anteriorly and inset in the symphyseal region. Posterior thigh flaps were elevated bilaterally at the subcutaneous plane and swung anteromedially to inset at the vulva. On the left the secondary defect was closed directly, but on the right was closed with a split skin graft harvested from the anterior abdominal wall skin (Fig. 4). Corrugated rubber drains were placed deep to the flaps and removed 3 days later.

The histology showed chronic ulceration and no malignancy. Minor graft loss, left suture line dehiscence and donor site infection occurred and were treated with dressings and antibiotics. She was discharged on 8/8/07 and attended one post-discharge visit 3 months after.

2. Discussion

Postburn perineal contractures are uncommon in this environment. It has been classified as primary or secondary [1]. Primary or intrinsic contractures where the perineal structures themselves are contracted are reportedly less common, whilst secondary or extrinsic contractures where perineal distortion

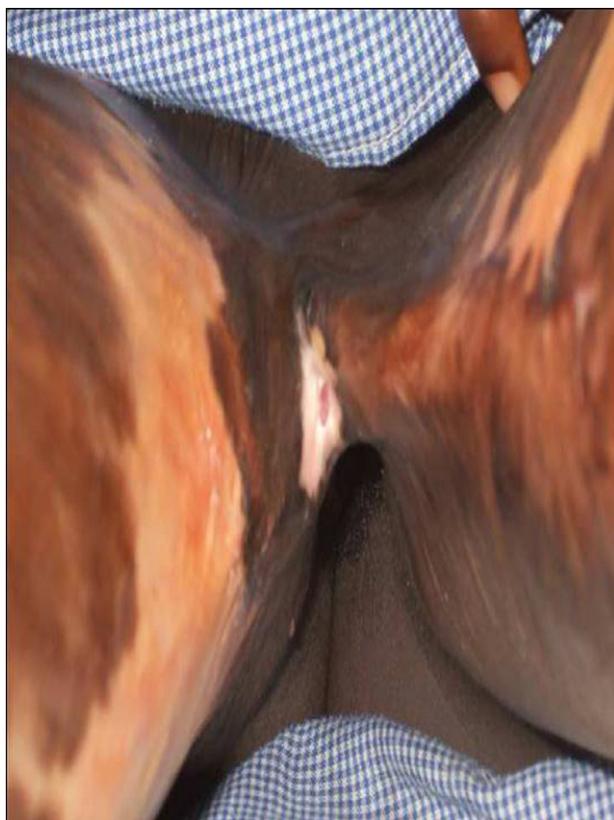


Fig. 3 – Note severe contracture, ulcer, and skin dyschromia.



Fig. 4 – Post-operative result.

follows contracture involving the thigh(s) and/or abdomen appear more frequent. Such patients (usually female) often have limitation of hip movements, and may have impaired coitus [1]. Here both types are seen. The first patient presented after several years following difficulty with coitus. This apparently was her greater concern. She did not pursue release of the residual ankle contractures.

The surgical management of perineal contractures has been with a combination of flaps and grafts [1–3]. Grafts mimic the original contour of the region but are of uncertain take, need prolonged splinting and immobilization, with occasional recontracture [1–3]. Flaps are more durable, and require no splints but the secondary defect following flap elevation can be resurfaced with grafts. A posteriorly based v flap of the postburn perineal skin was raised to release the vulva and thighs. Whilst some surgeons are wary about their use postburn skin flaps are useful [4,5] and had excellent survival here as did the other flaps from nonburn areas. The recreated defect following this release had to be adequately covered with skin. Since the medial thigh skin was supple in the patient, it was used. Its elevation also completed the release of the abduction contractures. Medial thigh fasciocutaneous flaps have been used for perineal reconstruction [3,6,7] in this patient it was raised as a cutaneous flap. The secondary defects were closed directly with some undermining. Freeing the clitoris was not only for aesthetic reasons; it plays an important role in sexual arousal, and the patient's primary concern was sexual satisfaction.

The second patient had a secondary contracture. Once the thigh contracture was addressed, the labia were fixed to their anatomic position. The ulcer was biopsied because of the risk of early malignant transformation seen in our environment [8]. The ulcer persisted probably from repeated tension at the wound following attempts at walking and abduction. The authors recommend the excision of such ulcers and the summit of healed scars especially if associated with depigmentation or ulceration, with subsequent microscopic examination to aid early detection of malignant transformation. Scar instability, constant irritation, repeated cycles of healing and breakdown, and an ulcer situated at the junction of pigmented and depigmented scar are all reportedly associated with malignant transformation [8,9]. The scar on the medial aspect of the right thigh unyielding as it was, precluded advancement for direct closure of the recreated defect. A posterior thigh flap was swung over to the defect and the secondary defect grafted. A flap was used in consideration that if a split skin graft were placed next to the labia, secondary graft contraction would distort the labia. In the present position of the graft over the secondary defect in the thigh however, secondary graft contraction would be an advantage as the supple skin of the posterior thigh flap would stretch to cover it. The authors prefer to use grafts this way in perineal contracture surgery.

A seven-flap plasty was not used in any as distortion of the labia would have followed. Its use has been in secondary contractures where the labia were not directly involved [2]. In considering reconstructive choices the impact on anatomical structures is a significant consideration. Each case has to be evaluated for the options best suited for the patient, the pathology and the socioeconomic constraints in the available health care facility without compromising functionality. Free flaps though viable were not used in these cases.

Colostomy was not done in any patient. The indication for colostomy is the need to divert the faecal stream away from the repair site in the bid to promote healing by obviating wound infection and dehiscence. Apart from prolonging operating time, increasing morbidity, and surgical sessions the surgeon felt the risk is negligible in these cases; other workers have successfully managed similar conditions without it [1,4]. Low rectal washout or dietary change was not included in the surgical workup of the patients. If there was perianal involvement, diarrhoea, faecal incontinence or an associated faecal fistula this may have been indicated. Both patients had urethral catheterisation intra operatively to protect the urethra. Catheterisation was discontinued post-operatively.

Follow up is still a great challenge in this sub-region. Some questions remain for the future: should vaginal delivery be attempted by the patients when pregnant and at term? Will the skin hold or should a generous episiotomy be done? A number of sub-saharan women regard anything short of vaginal delivery as a defeat of womanhood.

3. Conclusion

The principles of contracture release have been recreation of the original defect and provision of durable skin cover with added splintage. In the perineum, care must be taken to also restore anatomical features for functional and aesthetic reasons, as these cases illustrate. Flaps were chosen because they do not require splintage post-operatively as do grafts.

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Author contributions

All authors were involved in the preparation of the manuscript.

All surgeries were performed by IIO, the second case was admitted under REN and ORD assisted in that surgery as well as with data collection.

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Conflict of interest

The authors have no financial interests in the publication or otherwise of this article.

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