SCROTAL GANGRENE IN A FOUR-MONTH-OLD INFANT

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Fournier's gangrene or idiopathic gangrene of the scrotum was first described by Fournier in 1883. Its aetiology however has not yet been settled although it could appear to be satisfactorily explained on the basis of an infective thrombosis of some or all of the vessels supplying the scrotum (Gregory 1955).

Although scrotal gangrene has been described in all age groups from neonatal life to eighty years it is rare in early childhood. Of Gibson's (1930) review of 206 cases taken from world literature of this condition only 14 cases were under one year of age. The youngest patient on record was only five days old. This present communication is a report of a case of scrotal gangrene in a Malay of four months of age.

CASE REPORT

M.N., a Malay child aged four months was admitted on April 19th 1965 with a history of cough and breathlessness for one week's duration. Three days prior to admission he developed a fever and became more breathless. The mother also noticed that the patient's scrotum was inflammed. The next day, an ulcer developed over the site of this inflammation and it progressively extended its circumference. There had been no history of injury to the scrotum.

PHYSICAL FINDINGS

On admission, examination revealed an unkempt, very ill and poorly nourished child. He was anaemic and had generalized oedema. He had a temperature of 103°F and a respiratory rate of 55 per minute. There was bilateral conjunctivitis with a corneal ulcer on the right eye. The respiratory system revealed the presence of bronchopneumonia and a right pleural effusion. Over the scrotum was a large ulcer involving almost the whole of its anterior surface and the ulcer was covered with a layer of slough and faeces. A small ulcer was also seen on the under surface of the penis (see Figs. 1a & 1b).

LABORATORY INVESTIGATION

Laboratory investigations showed a haemoglobin of 5 gm% and a total white cell count of 35,200 with a differential count of polymorphonucleocytes 60%, lymphocytes 24%, monocytes 3% and eosinophils 0%. The total serum protein was 5·6 gm% with an albumin of 2·6 gm% and a globulin of 3·0 gm.%. The Kahn test was negative. A radiogram of the chest revealed the presence of a right pleural effusion. Cultures for pyogenic organic organisms taken from the throat, the eyes and the pleural effusion, were all sterile. Bacterial cultures from the scrotal slough revealed the presence of pseudomonas pyocyanea and B. alkaligenes on two occasions.

TREATMENT

The patient was given systemic crystalline penicillin and streptomycin. The gangrenous scrotal ulcer was dressed lightly with eusol-paraffin and varidase twice a day and this dressing was subsequently changed to cod liver oil when it was clear of slough. Gallows traction was applied to prevent contamination of the scrotum with faeces. The right pleural effusion was continuously drained under positive pressure and to the conjunctivitis and right corneal ulcer was applied unc. aureomycin.

PROGRESS

The general condition of the patient was seen to improve after a period of four days with the settling of the temperature to normal and the relief of dyspnoea. The corneal ulcer healed with no residual scarring. The slough of the scrotal ulcer was removed with the above regime of treatment and it revealed a clean base without exposing the testis. The ulcer then gradually healed by epitelialization and cicatrization over a period of two months (Fig. 2).

DISCUSSION

Although idiopathic gangrene of the scrotum which bears the eponym of Fournier's gangrene

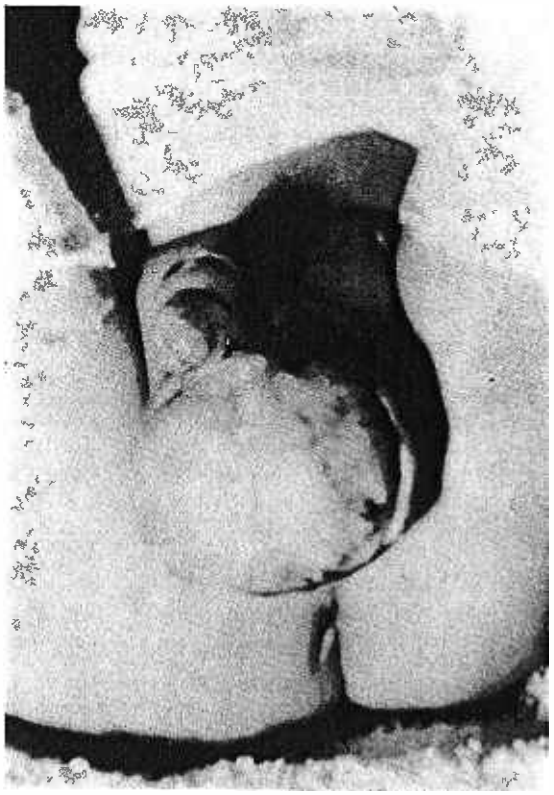

Fig. 1a. Shows the large scrotal ulcer covered over with a layer of slough on admission.

Fig. 1b. Shows the side view of the ulcer on admission

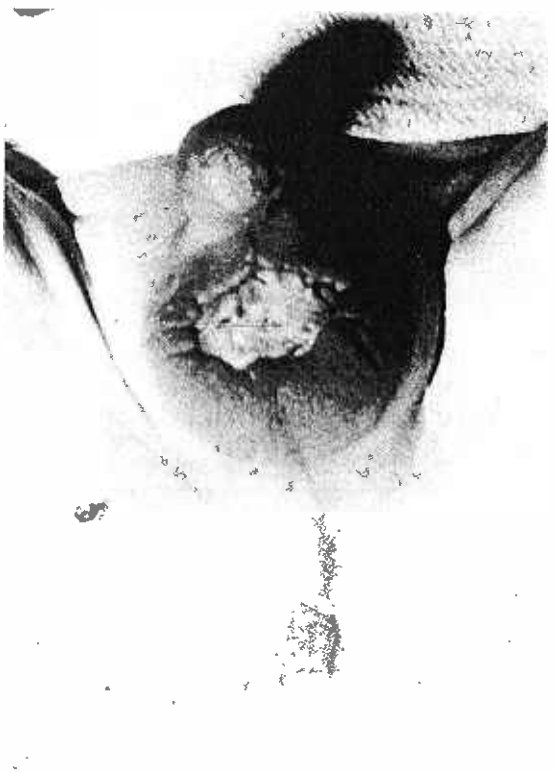

Fig. 2. Shows the healing of the ulcer at the end of two months.

was apparently first described by Fournier in the Semaine Medicale in 1883-1884, the problem of its aetiology has still not been settled. Randall (1920) in his study of sixteen cases of idiopathic gangrene of the scrotum believes that the lesion is undoubtedly infectious. Six of his cases had local neighbouring lesions (phimosis, chanchroidal infections, urethritis, trauma, one undergoing treatment for haemorrhoids) that he believes may have acted as a portal of entry for the virulent organisms. Gibson (1930) in his review of world literature of this form of gangrene, believes that the process is of an infectious nature, but that the nature of the infection necessary to produce gangrene is not clear. Three of his cases in infants were stated to have originated as erysipelas of the navel involving the scrotum. Gibson states that although the gangrene may not probably be called idiopathic or spontaneous when some coincidental or antecedent lesion exists, yet the presence of such lesion does not account for the occurrence of the gangrene. Our patient, in addition to the scrotal gangrene, had an associated broncho-pneumonia with a right sided pleural effusion and bilateral conjunctivitis. From his clinical history, it would seem that his chest infection preceeded his scrotal gangrene.

A clinical diagnosis of Fournier's gangrene would seem to entail the following criteria (Gregory (1955).

1. A sudden "explosive" onset of scrotal oedema progressing extremely rapidly to gangrene and without obvious cause.
2. An associated rapid and intense toxaemia.
3. The gangrene involves part or whole of the scrotum and occasionally the undersurface of the penis, but never involves the perineum, the thighs, or the abdominal wall.
4. The gangrene affects the whole thickness of the scrotal skin but never the underlying testes.

The above diagnostic criteria precludes the presence of antecedent or coincidental infection. Gregory described a case of Fournier's gangrene in a sixty-three year old who developed this gangrenous condition on the third postoperative day after surgery for a radicle cure of a left hydrocele. There was no associated wound infection nor evidence of haematoma formation inside the scrotum itself. Campbell (1955) in his discussion of Fournier's gangrene, presented three cases of this clinical entity. Two of his cases had some preceeding surgical intervention for fissure-in-ano and urethral stricture. Our patient seems to satisfy the above criteria for Fournier's gangrene with its apparent "explosive" onset, associated toxaemia and involvement of scrotal skin only. We have intentionally not titled this present communication as a case of Fournier's gangrene as we believe that the one important criterion for its diagnosis should be that the patient is in perfect health.

Bacteriological cultures taken from the gangrenous scrotum show a varied growth of organisms but in the majority of cases the bacteriology determined has been due to streptococci, staphylococci or the two combined (Gregory 1955). In our patient, the bacteria cultured were the pseudomonas pyocyanea and the B. alkaligenes, which were probably the result of faecal contamination.

Prior to the advent of antibiotics, the death rate was high and was variously given as 32·1 per cent (Randall 1920) and 26·7 per cent (Gibson 1930). Our patient was treated with penicillin and streptomycin and with a topical dressing of eusol-paraffin and varidase. No surgical intervention was necessary with this regime of treatment. Healing was very satisfactory indeed.

SUMMARY

1. One case of scrotal gangrene is described and the unusual feature of this case is that the patient is only aged four months.
2. As this is a rare condition, some aspects of its aetiology, diagnostic features, bacteriology and treatment are discussed.

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REFERENCES

1. Aird, I. (1957): "A Companion in Surgical Studies", (Edinburgh: E. & S. Livingstone).
2. Campbell, J.C. (1955): "Fournier's Gangrene", Brit. J. Urol. 27, 106.
3. Fournier: "Semaine Medicale, 1883-1884".
4. Gibson, T.E. (1930): "Idiopathic Gangrene of Scrotum", J. Urol. 23, 125.
5. Gregory, I.L. (1955): "Fournier's Gangrene", Brit. J. Urol. 27, 116.
6. Randall, A. (1920): "Idiopathic Gangrene of Scrotum", J. Urol. 4, 219.