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SPONTANEOUS SCROTAL FAECAL FISTULA IN A NIGERIAN ADULT: REVIEW OF LITERATURE AND PROPOSAL FOR MANAGEMENT PROTOCOL
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SPONTANEOUS SCROTAL FAECAL FISTULA IN A NIGERIAN ADULT: REVIEW OF LITERATURE AND PROPOSAL FOR MANAGEMENT PROTOCOL

A. A. AJAPE, M. D. ADESINA, I. O. OLAOYE and A. K. AROGUNDADE

SUMMARY

We report a 28-year-old Nigerian who presented with four days history of spontaneous scrotal ulceration and faecal discharge. This symptom was preceded by features of intestinal obstruction which got relieved after the faecal discharge from the scrotum. He was resuscitated and had segmental resection and anastomosis of the ileum, debridement of the scrotal skin for secondary closure and delayed repair of the hernia.

INTRODUCTION

Hernia is the most common condition encountered in surgical practice and about 6% of a community suffer from it (1). The morbidity and mortality can be very considerable if not attended to with precision (2,3).

Spontaneous scrotal faecal fistula (SSFF) is an unusual mode of presentation of inguinal hernia (4-10). The mechanism of the scrotal fistulation is related to the perforation of the twisted, thinned out and ischaemic bowel in the strangulated hernia sac. The contamination of the surrounding tissues initiates a process of inflammation and suppuration involving the fascia planes of the scrotum resulted in abscess formation that causes necrosis and rupture of the scrotal skin, thereby, establishing a fistula between the bowel mucosa and the scrotal skin (4,5,10). There was almost equal proportion of reported cases among the paediatric and adult patients in the literature (4-20).

We herein report this case of a spontaneous scrotal faecal fistula in an adult Nigerian with literature review to propose a management protocol.

CASE REPORT

A 28-year-old man presented to our facility with 4 days history of scrotal ulceration and discharge of faecal material. There was history of sudden onset of abdominal pain about two weeks prior to the scrotal ulceration. The pain was said to be severe, localised to the lower abdomen with no known relieving factor. There was associated post-prandial vomiting and constipation but no abdominal distension. He refuted previous history of groin swelling but noticed right scrotal swelling at the General hospital where he initially presented.

The scrotal swelling progresses rapidly resulting in skin ulceration and faecal discharge within 10 days. There was no known premorbid condition.

At presentation, he was ill-looking, dehydrated with axillary temperature of 37.7^{0}C but not clinically pale. The pulse rate was 96/min and blood pressure was 100/60mmHg. The chest examination was unremarkable.

The abdominal examination was essentially normal with no obvious groin swelling or demonstrable visible or palpable cough impulse and the digital rectal examination was normal.

He has a well circumcised penis with adequate penile size for age. The anterior scrotal wall of the right hemiscrotum was necrotic with slough and faecal material smearing the exposed testis, the surrounding skin was oedematous and warm (Figure 1a and b).

Figure 1a
Showing the faecal spoilage of the right hemiscrotal skin wall exposing the testis

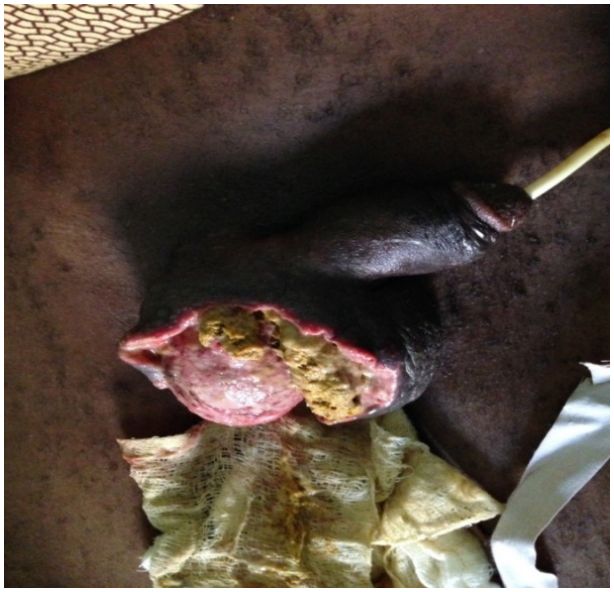
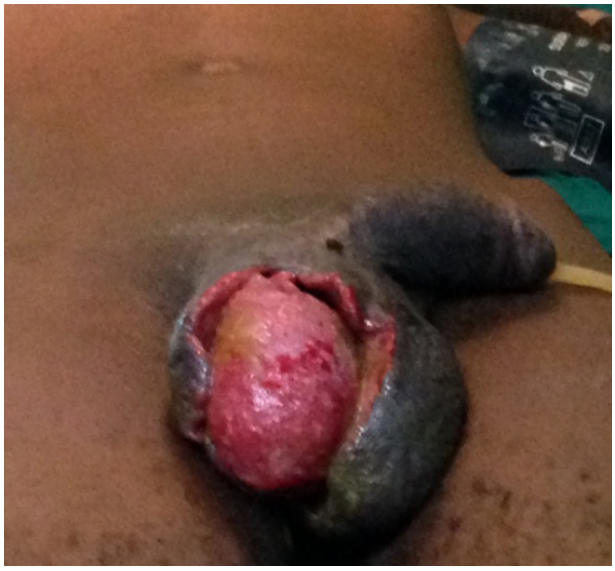


Figure 1b
After 48hrs of dressing while resuscitation was ongoing



A diagnosis of SSFF was made. He was admitted and had intravenous fluid and antibiotics. The scrotal wound was cleaned and dressing was applied. The haematological and biochemical evaluation was essentially normal. He had exploratory laparotomy, after adequate resuscitation, with finding of clean intra-abdominal cavity and a herniating segment of the ileum, about 40cm from the ileo-caecal junction, through the right deep inguinal ring into the scrotum. (Fig. 2) A perforation, about 4cm in diameter, was noted at the summit of the antimesenteric border of the herniated bowel loop

Figure 2a
Showing the perforated segment of the herniated ileum

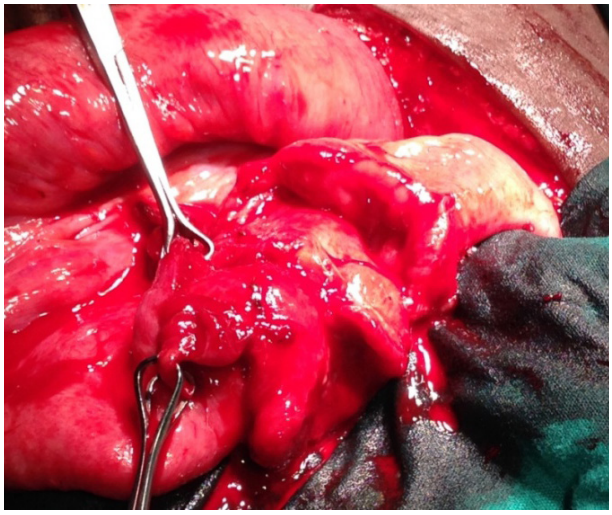
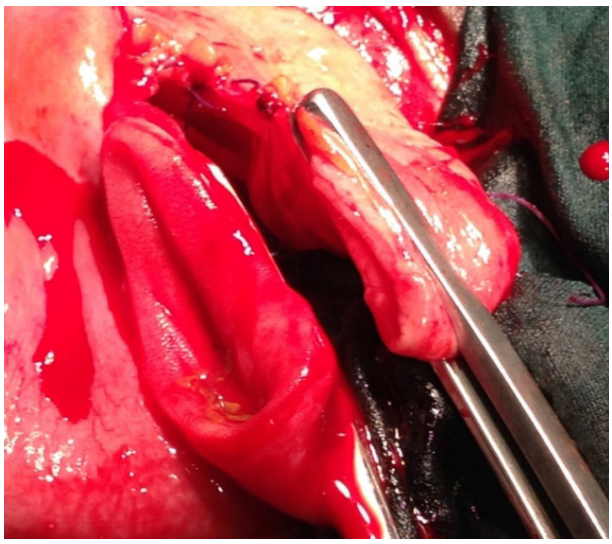


Figure 2b
Resected segment of the ileum before anastomosis

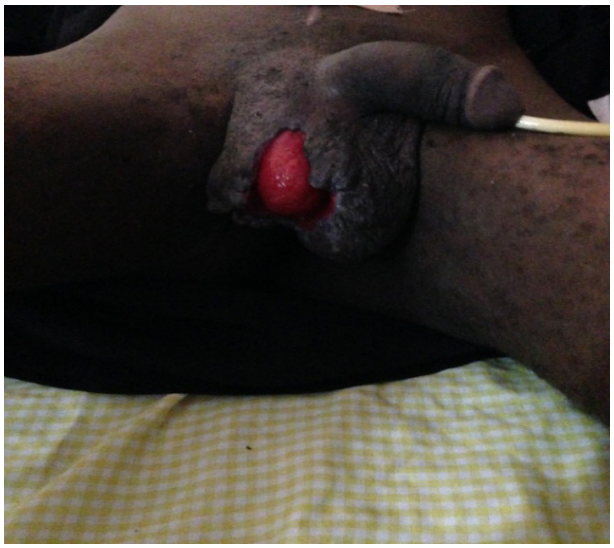


About 15cm segment of the ileum incorporating the perforated portion was resected and end-to-end anastomosis was done in two-layer. Herniorrhapy was postponed till a later date in view of the local sepsis. Scrotal wound was debrided, washed copiously after the abdominal wound was closed, and the wound dressing was then applied.

The patient had uneventful post operative course; he tolerated oral feeding from the third day of operation, the stitches were removed on the 8th day of surgery with a slight superficial wound infection at the middle of the infra-umbilical incision which did well after few days of dressing.

He had secondary closure of the scrotal wound and was discharged two weeks after the operation to have an elective repair of the inguinal defect.

Figure 3
Clean granulated scrotal wound just before secondary closure



DISCUSSION

Spontaneous scrotal faecal fistula is an extremely rare sequela of a complicated inguinal hernia that appears to be common in those part of the world that are characterised by limited resources from mismanagement, ignorance, poverty and lack of or uneven distribution of the healthcare facility among other factors (4-20). This condition rarely happens in developed parts of the world (16).

The incidence of inguinal hernia has been reported to be high in both the adults and children alike with the attendant complications that may result from the neglect of its treatment. Complication rates for inguinal hernia are in the range of 4 to 23.6% with less than 1% leading on to strangulation (2,10,19). A very rare consequence of strangulation is the development of SSFF most of which are emanating from the developing countries especially India and Nigeria (4-20). Literature search has identified eighteen patients, including the present case report, that were reportedly treated for SSFF in the world literature (5-20). This literature review formed the basis of the management protocol that is now being proposed.

All the reported cases were from the developing countries of the world. The largest number being from India, (nine cases) followed by Nigeria (six cases), one reported case each from Ghana and Pakistan. Fifteen out of the eighteen reported cases occurred on the right side.

Although, our patient refuted history of previous reducible inguinal hernia, majority of the other reports adduced to the fact that they had history of neglected inguinal hernia that was complicated by SSFF (4-20). The reported earliest age at presentation was 20-day-old neonate (4,6), however no age is exempted (16). The presentation at adulthood can be explained in part by reason of poverty and ignorance among the comparatively less educated patient population. It is expected that the attending obstetrician should examined the newborn child for the presence of congenital anomalies, including congenital hernia, and advised the parents appropriately. The inadequacy of qualified manpower and their unequal distribution between the rural and urban setting might have contributed to the trend seen among the children. Many of the reported patients presented with history suggestive of varying degree of intestinal obstruction with or without features of septicaemia as evident by pyrexia and tachycardia, however, they often got relieved of the symptoms of abdominal pain, abdominal distension and vomiting soon after bowel decompression occurs sequel to the development of SSFF (5,11,15). The index case report presented with features of intestinal obstruction that improved following the bowel fistulation.

At presentation the diagnosis of SSFF is usually obvious. However, ancillary haematological, biochemical and microbiological investigation are indispensible for optimal management of these patients. Although, the result of such investigations were normal in the index case, other reports has shown biochemical evidence of azotaemia, evidence of anaemia requiring blood transfusion (9-12,18), leucocytosis and positive blood culture. Depending on the state of the patient at presentation plain abdominal X-ray (9,12), abdomino-pelvic ultrasound (12), chest X-ray (12) and abdomino-pelvic CT-scan has been done. Our patient had only abdomino-pelvic ultrasound in addition to the routine basic investigations and this was sufficient for his management. Other patients had barium enema (5) and fistulogram (18).

Our patient had intravenous fluid and broad spectrum antibiotics for rehydration and to treat the envisaged sepsis and was operated upon after being optimised as evident by adequate urine output, normal pulse and temperature. He had laparotomy with resection and anastomosis of the perforated bowel and debridement of the scrotal wound. Definitive repair of the hernia was postponed till a later date for elective repair.

Although there was no available protocol for the specific management of patients with SSFF, basic surgical principles were followed in the reported management of this patient and this can be categorised into four categories vis: a) resuscitation of the patient, b) dealing with the perforated bowel, c) dealing with the necrotising fasciitis of the scrotal skin and d) repair of the hernia.

Adequate resuscitation of the patient is the single most important aspect of the management of the patients with this condition. Appropriate broad spectrum parenteral antibiotics, extending to the

post-operative period, were used in all the reported cases. Adequate fluid therapy was administered and blood transfusion was given as required (9,11,12,18). The timing of the operation, although not categorically stated in most of the reports, is of paramount importance. One should avoid the temptation of 'taken immediately to the operation theatre and an emergency exploratory laparotomy was performed' (12).

In the entire reports of SSFF involving the children, the inguinal approach was used and there was no need for conversion to laparotomy; except for the case that had anastomotic leak which required laparotomy to manage it (19). However, the adult patients were approached through the mid-line laparotomy incision with one case combining the mid-line incision with a separate inguinoscrotal approach to repair the hernia (13). It is pertinent to note that the peritoneal cavity was reported not to be contaminated except one case, which was actually contaminated from exterior (16). Thus, an inguinal approached may actually suffices for management of these patients, even in adult patients'.

All the patients required resection of varying segment of the bowel, mainly the ileum but also the caecum, appendix and the terminal ileum in one report (10). A patient had closure of the perforation but this resulted in leakage of the anastomosis and eventually needed to be treated with ileostomy (16). We recommend segmental resection and anastomosis in these patients.

In dealing with the necrotising fasciitis of the scrotal skin, most of the cases actually had debridement of the scrotal skin with dressing and secondary closure (5, 10-13,18,19). However, in few patients the scrotum was debrided and closed primarily over a drain (9). From first principle, we believed that the necrotising fasciitis should be debrided and converted to a 'Fournier's gangrene' and treated as such; just as it was done in the index case.

In dealing with the 'fascia weakness' of the hernia, herniotomy was reportedly done in all the paediatric cases that were reported; this has anatomical basis. In adults however, three cases had 'purse-string' applied to the deep ring giving consideration to the local sepsis that preclude proper herniorrhaphy (5,11,12); one had 'an anatomical repair of the hernia' (10), and another case had Shouldice repair (13). In the index case, the repair of the hernia was postponed till a later date. The need for immediate repair stemmed from the concern that the fistula arose from the initial negligent or delay in the treatment of a hernia and theoretically if the repair was postponed the patient might be lost to follow up (18). However, we believe that the local tissue sepsis will prevent adequate repair of the hernia and mesh repair is contraindicated. A simple 'purse-string' at the deep ring may not be adequate for repair of the 'fascia defect'. With proper counselling it is believed that the patient should actually report back for the herniorrhaphy. We therefore recommend that the herniorrhaphy should be dealt with at a later date as it was done in the index case report, except for the paediatric patients.

The outcomes of the treatment from the reported cases were not significantly different between the paediatric and adult patients; one patient each died from the ten paediatric and eight adult patients (9,12). Other morbidity reported was anastomotic leakage, one each from the paediatric and adult patients (16,19). Two patients among the paediatric had gangrenous testis (4,6).

The prevention of complications of inguinal hernia requires a renewed commitment of the trained personnel involved in patient care. We must go back to the rudiments of thorough physical examination at birth to detect this anomaly and appropriately advise the parents on the need for its repair. It is equally important to notify the care givers or parents on the telltale signs of impending complications. Examination for hernia should be incorporated into the pre-school and pre-employment routine physical examination.

In conclusion, there is a remote possibility of complicated hernia resulting in SSFF among the paediatric and adult patients alike. The suggested protocol for the management should involve adequate resuscitation with fluid, antibiotics and blood transfusion until the patient is stable for operative treatment; inguinal approach to access the herniating bowel segment for segmental resection and anastomosis; scrotal skin debridement and dressing for secondary closure and delay herniorrhaphy at a later date.

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