Subcutaneous Unilateral Testicle Implantation Following Contralateral Orchectomy and Radical Debridement for Fournier’s Gangrene: 24-Year Follow-Up

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Fournier’s gangrene is a life-threatening soft-tissue infection of the perineum requiring radical soft-tissue debridement and antibiotic therapy. We report a 24-year follow-up of a patient with Fournier’s gangrene treated with subcutaneous unilateral testicle implantation following contralateral orchectomy and radical debridement. Hormonal testicular function was preserved despite the subcutaneous location of the testis.

CASE REPORT

A 47-year-old African American man presented to the Emergency Department on February 20, 1980 with a complaint of perineal pain. He had a history of substance use and was unconscious for an unknown period of time before awakening with perineal pain. On physical examination, the patient had swelling of the perineum, left hemiscrotum, and left inguinal lymph nodes (Fig. 1). A retrograde urethrogram was normal except for gas bubbles in the scrotum. A water-soluble contrast enema showed no evidence of extravasation.

The patient was taken urgently to the operating room for exploration and debridement of the perineum. At surgery, the entire scrotum, the penile skin, and the left testicle were necrotic (Fig. 2) and were debrided (Fig. 3). A temporary colostomy to divert the fecal stream was performed on February 21, 1980. A third debridement was performed on February 22, 1980. On March 7, 1980, the patient underwent split thickness skin graft coverage of the penis, the abdomen, and the perineum. The right testicle was placed in a subcutaneous pocket in the right thigh (Fig. 4). Additional skin grafts were placed on March 14, 1980. The wounds healed although a perirectal abscess was drained on February 8, 1981. The patient subsequently underwent uneventful colostomy takedown. After discussing the options for scrotal reconstruction, a decision was made to leave the testicle in the subcutaneous right thigh pouch. At this time, the patient reported normal erections and ejaculations. The patient then moved to Alabama and was lost to follow-up. Twenty-four years later, at the age of 71, he returned to San Francisco to seek advice regarding an ileoanal pouch reconstruction after previously undergoing a subtotal colectomy and ileostomy at another hospital for inflammatory bowel disease. After extensive discussion, the patient declined ileoanal pouch reconstruction. The patient’s grafts were well healed (Fig. 5) and the patient reported having erections and ejaculations. The right testicle located subcutaneously in the right thigh pocket was easily palpable and was normal in both size and consistency. A serum testosterone measured on July 24, 2004 was 883 ng/dL (normal 241–827 ng/dL).

DISCUSSION

Fournier’s gangrene is a necrotizing soft tissue infection of the perineum first described by the Parisian dermatologist/venerologist Jean-Alfred Fournier in 1883. Although Fournier originally described fulminant gangrene of the scrotum and penis in five young men, the eponym now applies to necrotizing perineal infections in both men and women.

Fournier’s gangrene is usually caused by commensal facultative aerobic and anaerobic bacteria which reside below the pelvic diaphragm. The most common portals of entry of the infection are cutaneous, colorectal, and urologic sources. Fournier’s gangrene is associated with diabetes, alcoholism, nutritional depletion, and immunosuppression. Cases have been reportedly associated with penile self-injection of cocaine and cord blood stem cell transplantation.

The principles of therapy include aggressive source control and broad spectrum antibiotics. Radical debridement of all necrotic skin, fat, fascia, and muscle is essential. In our case, the entire scrotum, penile skin, and left testicle were necrotic, requiring debridement. Subcutaneous infection extended into the anterior abdominal wall and thighs requiring extension of the debridement. We employed a temporary proximal diverting colostomy to facilitate wound toilet.
Antibiotic coverage of both facultative aerobic organisms such as clostridia, klebsiella, streptococci, staphylococci and the coliforms, as well as anaerobic coverage for bacteroides and cornybac-teria, is important. A combination of penicillin, metronidazole, third-generation cephalosporins, and aminoglycosile have all been recommended. Single drug coverage for such a severe infection often due to multiple organisms is probably unwise. Unfortunately, the details of the bacteriology of our patient’s infection and the precise antibiotic therapy have been lost with the passage of time. The so-called “triple drug therapy” including high-dose penicillin, metronidazole, and an aminoglycoside was routinely employed in the treatment of necrotizing soft-tissue infections at San Francisco General Hospital when this patient presented for care in 1980.

Multiple reconstructive options are available for genital skin reconstruction. The thigh pocket is a simple reconstructive technique that can be used for temporary or permanent testicular coverage.
A variety of flaps have been recommended for scrotal reconstruction including gracilis fasciocutaneous and myocutaneous flaps, the “short gracilis flap,” groin flaps, rectus abdominis flaps, and rotation/advancement flaps following tissue expansion. These options are limited to case reports and small series lacking long-term follow-up.

Recently, split-thickness skin graft coverage of the testicles has been advocated as the best method of testicular coverage by virtue of its simplicity, superior cosmetic appearance, and reported superior retention of testicular function due to thin skin coverage. Sufficient long-term follow-up for split-thickness skin graft is available to support its use as the primary method of scrotal reconstruction.

SUMMARY

We report an elevated testosterone level 24 years after subcutaneous implantation of the unilateral right testicle after radical soft tissue debridement and left orchiectomy for Fournier’s gangrene. Although the patient reported normal erections and ejaculations, we do not have any information about sperm counts. The patient has since been lost to follow-up.

REFERENCES