Untreated Rupture of the Tunica Albuginea

A patient with untreated rupture of the tunica albuginea underwent surgical exploration 6 weeks after acute scrotal trauma. A layer of epithelium had grown across the bulging seminiferous tubules, and no further surgical repair was necessary. This spontaneous repair phenomenon has not previously been reported pictorially in the human testis. The recommended treatment of testicular rupture is surgical exploration and repair.

REPORT OF CASE

A 29-year-old man sustained nonpenetrating left scrotal trauma. His left hemiscrotum gradually enlarged, reaching "grapefruit" size at 6 weeks after the injury. He ultimately consulted his physician, who advised an operation. He requested a second opinion at our institution. Examination revealed a 12-cm, smooth, firm, nontransilluminating left scrotal mass. No definite intrascrotal structures were palpable, and tenderness was minimal. Ultrasonographic examination revealed a collection of fluid with fine internal echoes that surrounded a normal left testis (Fig. 1). At operation, a thickened tunica vaginalis was incised, and 200 ml of fluid was drained from a hematocoele. The testis had a 4-cm tear in the tunica albuginea through which seminiferous tubules bulged (Fig. 2). The tubules were completely covered by a translucent layer of tissue. The hematocoele sac was excised. The patient recovered uneventfully.

A follow-up ultrasound study 1 month later showed no residual hematocoele and a normal left testis (Fig. 3). At 9 months, the patient had minimal swelling and tenderness and a normally sized testis. His wife was 6 months' pregnant.

DISCUSSION

Blunt trauma to the scrotum causes testicular rupture in approximately 45% of cases.1-4 A tear in the tunica albuginea allows herniation of seminiferous tubules into the potential space within the tunica vaginalis. A reactive hydrocele often develops, and with concomitant bleeding, a hematocoele may eventually form.

Nausea, vomiting, pain, and an enlarging scrotal mass usually prompt the patient to seek medical attention early.5,6 Physical examination discloses a variable-sized nontransilluminating scrotal mass.

The differential diagnosis includes epididymitis, orchitis, torsion of the testis or testicular appendages, reactive hydrocele, hematocoele, ruptured varicocele, and testicular tumor.5,6 The correct diagnosis is difficult to make on the basis of the history and physical examination alone.

Recently, the availability of ultrasonography of the scrotum has decreased some of the confusion associated with a nontransilluminating scrotal mass. This procedure enables the distinction of fluid and solid masses, identifies hydroceles and hematocoeles, and produces an architectural image of the impalpable testicle within a fluid-filled sac (Fig. 1 and 3).7-9 In a case of rupture of the testis, the exact location of the injury may not be visualized with ultrasonography, but a focal area of altered echo pattern as a result of hemorrhagic or infarcted parenchyma is typically discernible.10
The recommended treatment of a ruptured testicle is surgical exploration and repair. Closure of the tunica albuginea should be undertaken with or without partial trimming of extruded or necrotic seminiferous tubules. Early intervention increases the possibility of testicular salvage. Conservative therapy without operation is discouraged and has resulted in an orchiectomy rate as high as 45%. In one study, two thirds of the patients with a ruptured testicle who underwent exploration after a delay of 3 or more days eventually had to undergo orchiectomy. Infection can cause necrosis of the testis, or testicular atrophy may result from the presence of a tense hematocele or from massive herniation of the seminiferous tubules through an extensive tear.

The case presented herein illustrates for the first time in humans the healing reaction in which reepithelialization occurred between the split edges of the tunica albuginea, covering the herniated seminiferous tubules. Mesothelial healing has recently been demonstrated experimentally in the tunica albuginea of the rat. Cellular ingrowth from the wound edges proceeded to cover and seal the exposed parenchyma within 4 to 5 days. Adhesions to the tunica vaginalis did not occur, and tissue integrity remained intact.

Although we report the healing process that occurred in an untreated case of rupture of the tunica albuginea, we do not advocate delayed or conservative treatment of severe testicular trauma.
REFERENCES