A huge acquired smooth muscle hamartoma of the scrotum

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Abstract Smooth muscle hamartoma (SMH) is a rare benign proliferation of the smooth muscle. It usually arises on the back and proximal extremities, although it develops on the scrotum in rare cases. Here, we present a 58-year-old man who presented with a huge mass of the scrotum, which was first noticed 10 years previously. The scrotum was considerably enlarged and affected the patient's gait. We performed wide excision of the mass, measuring 32.5×20×14 cm in size and weighing 3600 g. The residual uninvolved scrotal skin flap was well vascularised and elastic, and the testis could be properly contained within the scrotum after primary closure of the defect. A split-thickness skin graft was used to resurface the skin defect of the penile shaft. The patient was satisfied with the shape and texture of the scrotum after reconstruction. The postoperative course was uneventful. We assess our experience in the successful reconstruction of a large penoscrotal skin defect using a scrotal skin flap and split-thickness skin graft. This procedure is safe and uncomplicated with the patient regaining a normal genital contour and satisfactory functional recovery.

Keywords Smooth muscle hamartoma · Penoscrotal defect · Scrotal reconstruction · Extratesticular tumors

Introduction

Smooth muscle hamartoma (SMH) of tunica dartos of the scrotum is an extremely rare benign extratesticular solid tumor, in which cases, the patient presents with an asymptomatic tight and thickened scrotum. SMH usually arises on the back and proximal extremities, although it may develop on the scrotum in rare cases [1]. SMH is usually congenital (CSMH), but a few cases of the acquired variant (ASMH) have also been reported [2]. Here, we report a case of a huge ASMH in the penoscrotal region that was successfully treated with wide excision with reconstruction using an expanded residual scrotal flap and skin graft. This procedure is safe and uncomplicated with the patient regaining a normal genital contour and satisfactory functional recovery.

Case report

A 58-year-old man presented with a progressive enlarged scrotum, which was first noticed 10 years previously. Multiple small papules developed on the penoscrotal area approximately 2 years previously, and the enlarged scrotum affected the patient's daily activities of living. His gait was affected and the soccer ball-sized tumor prevented him wearing regular clothing. In addition, sexual intercourse and erectile function were affected. Physical examination revealed thickening and swelling of flesh in the scrotum and along the circumference of the penile shaft. The scrotum was approximately 30 cm in diameter. Multiple rice-grain to pea-sized, skin-colored, elastic, firm papules and nodules (0.3–3 cm) were observed (Fig. 1). Results of routine laboratory investigations, including levels of serum tumor marker was within normal limits. Magnetic resonance imaging (MRI) of the scrotum showed a marked thickening of the scrotal wall. The scrotal wall showed hypointensity on a T1-weighted image and hyperintensity on a T2-weighted image. In

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Fig. 1 Preoperative photograph showing a huge scrotum with multiple papules and nodules

addition, multiple hyperintense lobulated nodular lesions were observed on the scrotal surface on the T2-weighted image. Both testes had a normal appearance without focal lesions.

Wide excision of the scrotal tumor resulted in extensive scrotal and penile shaft skin loss. Both testes and spermatic cord were denuded, but were otherwise normal. The residual uninvolved scrotal skin flaps were mobilized to cover both testes. With this, both testes could be properly contained inside the scrotum. The large penile shaft defect was covered with split-thickness skin grafting (0.03-cm thick). The mass measured $32.5 \times 20 \times 14$ cm and weighed 3600 g.

ASMH of the tunica dartos was diagnosed based on clinical presentation, histopathology, and immunohistochemical staining. Postoperative recovery was uneventful. The cosmetic appearance after 6 months was well (Fig. 2). During the 1-year follow-up period, the patient responded well with no complaint or disease recurrence.

Discussion

Although most extratesticular tumors are benign, surgery is generally opted for because of the symptoms and diagnostic uncertainty. In this case, wide excision of the tumor resulted in extensive scrotal and penile skin loss, with preserved testis

Fig. 2 Normal genital contour after 6 months

and spermatic cord. Reconstruction of the scrotum and penis was required for cosmetic, functional, and psychological reasons. Available treatment modalities include skin grafting, use of flaps, burial of the exposed testes in the inguinal pouch, and scrotal tissue expansion. Numerous techniques have been described for scrotal reconstruction, reflecting the challenge and complexity these defects present [3]. Thus, no single method is applicable to all types and degrees of skin loss.

In this case, the posterior scrotal skin was uninvolved and could be used as a skin flap source for scrotum reconstruction. Scrotal reconstruction and coverage of the exposed testes were achieved by scrotum defect closure using two lateral scrotal skin flaps. With this approach, part of the scrotal skin was preserved to maintain thermo-regulation for spermatogenesis and to decrease the possibility of malignant change.

Penile skin defects typically result from traumatic injury or circumcision, infection, or excision of the penile shaft or glandular tumors. Local flaps or regional transfers are occasionally required [4]. Full-thickness skin grafts or deep splint-thickness grafts are the mainstay of penile reconstruction. In this case, wide excision of the penile shaft tumor resulted in a complete circumferential skin defect of the penile shaft. A skin graft was harvested from the thigh and resurfaced onto a well-vascularised recipient bed of penile shaft tissue, secured with a tie-over bolus pressure dressing. Cosmetic appearance after 6 months was well with no obvious scar contracture. The patient regained normal gait and was able to wear regular clothing because of the reduced scrotal size. Sexual performance was not impacted and no erectile dysfunction has been reported by the patient.

Conclusion

Wide excision of the huge scrotum tumor and immediate reconstruction of a large penoscrotal skin defect is our strategy of treatment. Scrotal reconstruction was successfully preformed using a residual scrotal skin flap to maintain thermoregulation of the scrotum wall and skin graft to cover the penile defect. We wish to highlight the need to preserve uninvolved scrotal skin flap as much as possible to cover the testis. This procedure is safe and uncomplicated; postoperative recovery and cosmetic appearance was well.

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