Case Report

Unusual Appearance of an Extratesticular Epidermal Inclusion Cyst of the Scrotum

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This report describes an unusual appearance of an epidermal inclusion cyst (EIC) of the scrotum in an adult patient, at first glance resembling an extranumerary testis.

CASE REPORT

A 44-year-old white man presented with a 4 year history of right scrotal mass. He had a prior excision of another scrotal mass at a different medical facility, which was reported as benign. He had no pain, fever, chills, nausea or vomiting. Urine analysis was normal. Prior medical history included insulin-dependent diabetes mellitus, arterial hypertension, coronary artery disease, and end-stage liver disease complicated by hepatocellular carcinoma treated with liver transplant. Because of the transplant, he was on immunosuppressive drugs. Physical examination showed a non-tender right scrotal mass measuring approximately 3 × 3 cm, which was separate from the adjacent testis. No hernia or hydrocele was found. Ultrasound showed both testes with normal size, echo pattern and vascularity (Figs 1 and 2). Immediately above the right testis (Fig. 1), which measured 3.9 × 2.4 × 2.5 cm, there was an ovoid structure (Fig. 2) similar in echogenicity, shape and size (3.9 × 2.1 cm) to that of the testis. The only difference was that it had no detectable blood flow, and whereas the testis was surrounded by a small hydrocele, the mass was not. Both epididymes had minute cysts, and there were bilateral small hydroceles. The described structure was thought to represent a possible “sterile abscess”. The possibility of a torsed supernumerary testis seemed unlikely in view of the clinical absence of pain. The patient underwent surgical exploration with removal of a well-encapsulated cyst from the scrotal wall. On section, it showed a thick white, cheesy content. Pathology study indicated an EIC. Bacteriology was negative. The patient had an uneventful recovery.

DISCUSSION

EICs are the most common type of simple epithelial cysts (benign). They are well encapsulated, subepidermal and mobile. Pathology shows a capsular wall of keratinized squamous epithelial cells with the lumen composed of sebaceous material. They differ from dermoid cysts in that they lack cutaneous adnexal structures, such as sebaceous or sweat glands, hair follicles or teeth [1] Three theories have been formulated regarding their aetiology: (1) ectopic epidermal tissue; (2) monophasic teratoma; and (3) post-trauma [2]. EICs may be found anywhere in the body but most commonly on scalp, face, trunk and back [3]. EICs may be single or multiple and associated with the Gardner syndrome. EICs in the scrotum are infrequent. There, they are most commonly found in the testis itself and represent about 1% of the tumours in that location [4]. An isolated report describes a spermatic cord location [2]. Outside the testis and spermatic cord, EICs are found in the scrotal wall, reports of which are found in the Japanese, Spanish and English medical literature. The English articles are mostly in the non-radiological journals. Despite mentioning the use of ultrasound, very few of them show the corresponding photographs [5]. EICs are seen in children and adults. They are subcutaneous and most frequently found at the median raphe from the distal penis to the anus [6]. Several of those patients presented with large midline masses extending into the rectum [6] or into the pelvis [7,8]. In the scrotum, EICs should be differentiated from other paratesticular masses such as rhabdomyosarcoma.

The sonographic appearance of EICs has been described in a recent study [3]. Out of 62 patients with EICs, 24 had preoperative ultrasound examinations. Of those, only two were located in the groin or scrotum, without specifying if they were intratesticular or not. The authors described the cysts as ranging from 1 to 6 cm in diameter. They were ovoid or spherical (71%), lobulated (21%) or tubular (8%). The lobulated appearance was seen in cases of cyst rupture, and it was associated with increased vascularity due to secondary inflammatory reaction. The most common echo pattern was one of hypoechochogenicity with scattered reflectors. Posterior sound enhancement was seen in 96% of the lesions. Based on the distribution of internal echoes they described five patterns: (1) alternating hypo and hyperechoic concentric rings; (2) target sign, in a predominantly hypoechoic lesion with a central echogenic focus; (3) hypoechoic lesion with scattered echogenic reflectors; (4) heterogeneous hypoechoic...
lesion; (5) lesion with areas of variable echogenicity. When EIC ruptures, an inflammatory reaction results with development of dystrophic calcifications [9], increased vascularity and occasionally a sterile abscess [10]. Case reports without ultrasound images of scrotal EICs describe them as of: homogeneous solid appearance [7,8], and solid and homogeneous with a septum [6]. One report with ultrasound images [5] shows a large mass with homogeneous low-level echoes.

The uniqueness of the ultrasound examination of our patient is that the EIC presented with the same size, shape and echogenicity as the adjacent testes, and certainly simulating a possible polyorchydism. The diagnosis of EIC was confirmed by the absence of vascularity, and the EIC was not surrounded by the hydrocele, thus indicating, an extravaginal location.

REFERENCES