

Perineal lipoma on an accessory scrotum: A case report

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Abstract

Context: Accessory scrotum is a rare congenital malformation, often associated with other perineal anomalies, of which perineal lipoma is the most frequently described association. This unusual entity poses a diagnostic challenge, particularly in the differential diagnosis with other congenital perineal masses. Imaging plays an essential role in characterizing the nature of the lesion, defining its anatomical relationships, and guiding therapeutic management.

Case presentation: We report the case of a 1-year-old patient, born to non-consanguineous parents, with no medical or surgical history, who presented for management of a congenital subscrotal mass that had been progressively increasing in size. The patient initially underwent ultrasonography followed by cross-sectional imaging. The diagnosis of a perineal lipoma associated with an accessory scrotum was established, with specification of its relationships to the adjacent perineal and genital structures. No deep extension or communication with the pelvic organs was demonstrated.

Conclusion: Perineal lipoma on an accessory scrotum constitutes an exceptional association whose recognition relies largely on imaging. Imaging allows precise characterization of the lesion, comprehensive anatomical assessment, and optimal therapeutic guidance. Knowledge of this entity by the radiologist is essential in order to avoid diagnostic errors and to contribute effectively to multidisciplinary management.

Keywords: Perineal lipoma; Accessory scrotum; Congenital malformation; Imaging

1. Introduction

Accessory scrotum is an extremely rare congenital anomaly resulting from a disorder of the embryological development of the genital swellings and the perineal mesenchyme. It presents as the presence of supernumerary scrotal tissue, usually located in the perineal region, without anatomical continuity with the main scrotum [1]. This malformation is most often associated with other local anomalies, among which perineal lipoma represents the most frequently reported association in the literature [2–4].

Perineal lipoma is a benign tumor of mesenchymal origin, unusual in this location, which clinically presents as a soft, painless, and slowly growing mass [2,5]. The perineal lipoma–accessory scrotum association is considered to result from a defect in the migration and differentiation of mesenchymal adipose tissue during the embryonic development of the external genital structures [3,6]. This embryological hypothesis is widely accepted and explains the frequency of their coexistence.

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Clinically, this association may pose a diagnostic problem, particularly given the diversity of congenital perineal masses, such as teratomas, perineal hernias, hamartomas, anorectal malformations, or associated urogenital anomalies [7–9]. A precise evaluation is therefore essential in order to rule out these differential diagnoses and to guide appropriate management.

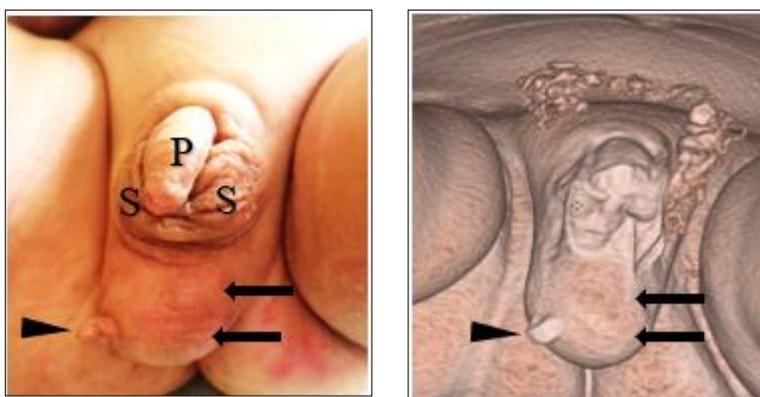
In this context, imaging plays a central role. Ultrasound is the first-line examination, allowing initial characterization of the mass, particularly its fatty nature, topography, and relationships with surrounding structures [5,9]. MRI, thanks to its excellent contrast resolution and tissue characterization capability, represents the reference examination for confirming the lipomatous nature of the lesion, assessing its extent, ruling out any deep communication, and guiding surgical planning [5,10].

Through this case of perineal lipoma on an accessory scrotum, we aim to illustrate the characteristic radiological features of this rare association, to highlight the complementary contribution of ultrasonography and cross-sectional imaging, and to discuss the main differential diagnoses, while emphasizing the fundamental role of imaging in the optimal management of these congenital malformations.

2. Case presentation

One-year-old infant, born to non-consanguineous parents, with no medical or surgical history, who presented for management of a subscrotal swelling present since birth. General examination revealed a conscious patient, with normally colored conjunctivae, afebrile at 36.8 °C, and normal vital signs.

Clinical examination showed well-differentiated external genitalia of male type, uncircumcised. Examination also revealed a median subscrotal mass of soft consistency, surmounted by a right-sided cutaneous protuberance (Figure 1). The remainder of the somatic examination was unremarkable.



S: scrotum P: penis

Figure 1 Appearance of an accessory scrotum (arrowhead) attached to a perineal lipoma (arrow)

Scrotal ultrasonography was performed, revealing the presence of a well-defined lesion in the subscrotal region, roughly oval in shape, hypoechoic, containing hyperechoic strands, and showing no color Doppler signal, measuring 21 × 14 mm in axial diameters. This lesion was surmounted by a well-defined cutaneous lesion, heterogeneously echogenic, with no color Doppler signal, measuring 8 × 4 mm in diameters (Figure 2).

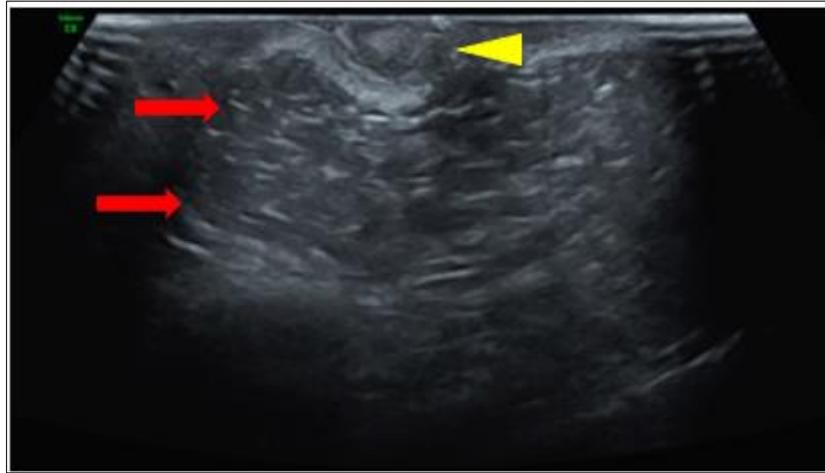


Figure 2 Scrotal ultrasonography showing a perineal lipoma (red arrow) associated with an accessory scrotum (yellow arrowhead)

A pelvic CT scan was performed, revealing a well-defined perineal lesion of fatty density, attached anteriorly to the scrotal tunics, and surmounted by a small right-sided cutaneous lesion, which showed homogeneous enhancement after contrast administration, suggestive of a perineal lipoma associated with a supernumerary scrotum (Figure 3).

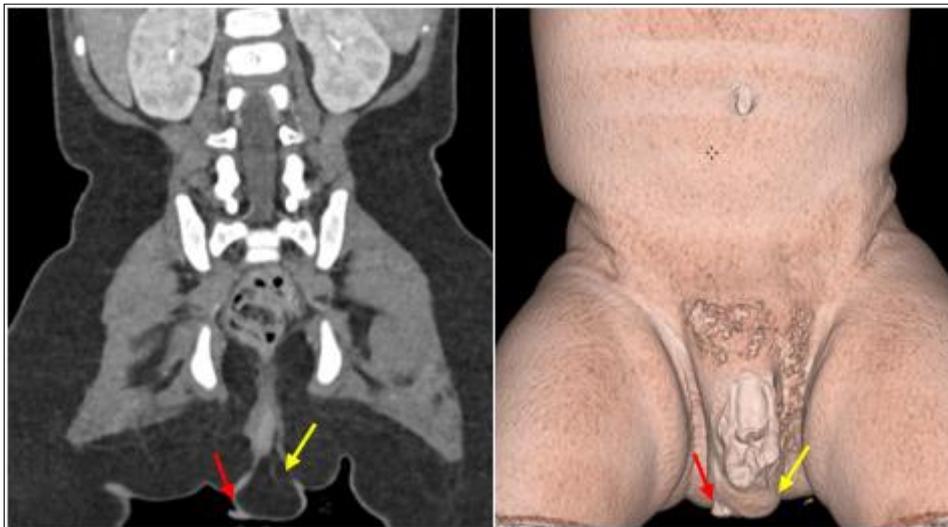


Figure 3 Pelvic CT scan after intravenous contrast injection in coronal sections (a) and 3D reconstructions (b) showing a perineal lipoma (yellow arrow) associated with an accessory scrotum (red arrow)

The patient underwent surgery, during which a longitudinal incision was made over the firm portion of the subscrotal mass, the mass was excised, and the specimen was sent for pathological examination.



Figure 4 Intraoperative image highlighting a scrotal lipomatous mass. Complete excision was performed with preservation of the adjacent anatomical structures

The postoperative course was marked by suture dehiscence at the incision site, with passage of stool through the opening.



Figure 5 Clinical photograph showing perineal wound dehiscence with fecal discharge

The patient underwent reoperation, with an uncomplicated postoperative course.

3. Discussion

Accessory scrotum is an exceptional congenital malformation, first described by Lamm and Kaplan, characterized by the presence of supernumerary scrotal tissue, usually located in the perineal region and without communication with the normal scrotum [1]. In the majority of reported cases, this anomaly is associated with a perineal lipoma, making this association an almost pathognomonic anatomo-clinical entity [1-4].

In the series by Sule et al. [1], which compiled several cases reported in the literature, a perineal lipoma was found in the majority of accessory scrotum cases, confirming that it is the most frequently associated anomaly. The authors emphasize that the lipomatous mass is usually located in a median or paramedian perineal position, in immediate contact with the supernumerary scrotal tissue, as observed in our case.

Matsui et al. [3], through an analysis of several reported cases, emphasized the importance of the common embryological origin of the accessory scrotum and the perineal lipoma. Their series highlights that these patients generally do not present chromosomal abnormalities and that the malformation is related to a local defect in the differentiation of the perineal mesenchyme during the formation of the genital swellings. This hypothesis is also

supported by Raveenthiran [6], in a broader review on scrotal developmental anomalies, where the perineal lipoma is described as a mechanical factor that can disrupt the normal fusion of the genital folds.

Clinically, several series confirm that the discovery is most often neonatal or in early childhood, presenting as a soft, painless perineal mass [2,4,8]. Chatterjee et al. [4], in their case series, reported the absence of associated functional signs and the benign course of these lesions, highlighting the importance of precise radiological diagnosis to avoid unnecessary invasive explorations.

The contribution of imaging has been particularly well studied in the series by Park et al. [5], which is one of the major references on radiological aspects. In this study, ultrasonography consistently showed a homogeneous, well-defined mass with fatty echotexture, without a solid component or abnormal vascularization. MRI confirmed the lipomatous nature by T1 and T2 hyperintensity with signal suppression on fat-saturation sequences, and allowed precise analysis of the anatomical relationships.

Chen et al. [10], in a series dedicated to MRI features, emphasized that the absence of a non-fatty tissue component and the lack of pathological enhancement after gadolinium administration are essential criteria for ruling out a more aggressive tumor, notably liposarcomas, which are exceptionally reported in this region in children.

Large radiological series on congenital perineal masses, notably those by Herman and Siegel [7] and Lowe et al. [9], show that a perineal lipoma associated with an accessory scrotum should always be considered in any perineal fatty mass in male infants. These authors emphasize the importance of a comprehensive imaging workup to rule out the main differential diagnoses, particularly sacrococcygeal teratoma, perineal hernias, and anorectal malformations, which can radically change the treatment.

Therapeutically, surgical series report a consistently favorable outcome after complete excision of the lipomatous mass and the accessory scrotal tissue [2,4,8]. No recurrence or malignant transformation has been reported in long-term follow-up, confirming the benign nature of this entity. Preoperative imaging is therefore essential to reassure the surgical team about the nature of the lesion and to plan a simple and complete excision.

Thus, our observation aligns perfectly with data from major published series. It confirms that the perineal lipoma-accessory scrotum association constitutes a rare but well-defined entity, whose diagnosis relies largely on imaging, particularly ultrasonography and MRI. Familiarity with its typical radiological features enables the radiologist to make a reliable diagnosis, rule out serious differential diagnoses, and contribute decisively to optimal therapeutic management.

4. Conclusion

Perineal lipoma on an accessory scrotum is a rare entity. Diagnosis relies on clinical examination and imaging, mainly ultrasound and MRI. Complete surgical excision is the treatment of choice. Awareness of this atypical location helps prevent diagnostic errors and guides appropriate therapeutic management.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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