

# Inguinal dermoid cyst of the round ligament. A case report and review of the literature

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## Summary

**Introduction:** Dermoid cysts are rarely located in extraovarian sites, representing an extremely uncommon lesion of the round ligament. The differential diagnosis of an inguinal lesion that proved to be a dermoid cyst deriving from the round ligament is presented with a review of the literature.

**Case Report:** A case of a 27-year-old female with a dermoid cyst arising from the round ligament and lying inside the inguinal canal, which was tender and palpable, is reported.

**Discussion:** Underlining their origin, clinical manifestation, gross appearance and pathology, we differentiate dermoid cysts mainly from epidermoid cysts and mature cystic teratomas, analyzing the importance of such a distinction to the possibility of malignant degeneration and recurrence of a dermoid cyst in the round ligament.

**Key words:** Dermoid cyst; Extraovarian; Round ligament.

## Introduction

Round ligament tumors, though uncommon, include a great variety of both primary and secondary neoplasms as well as lesions of inflammatory and traumatic origin. Fibromyomas, adenomyomas, endometriomas and serous cysts are recognized most frequently [1]. Dermoid cysts of the round ligament are extremely rare with only a few cases reported [1-4].

The term 'dermoids' includes teratomatous cystic neoplasms, most commonly encountered in the ovary, and benign cutaneous inclusion cysts [4]. The gross appearance of these entities is similar with a keratinized squamous epithelium-lined cyst containing sebaceous material and skin appendages. The presence of a protuberance of mesenchymal and endodermal elements in the cyst wall establishes the diagnosis of mature cystic teratoma.

We present a case of a dermoid cyst deriving from the round ligament located inside the inguinal canal in a 27-year-old female. The possible pathogenesis of dermoid cysts of the round ligament and the potential of malignant degeneration or recurrence are discussed.

## Case Report

A 27-year-old female was referred to our department with a six-month history of right groin fullness and tenderness, and a bulge in the area. Physical examination revealed an irreducible slightly tender mass in the right inguinal region. Presumptively, the palpable mass was believed to be either a right direct inguinal hernia or an enlarged lymph node. Ultrasonography and abdominal computed tomography showed a homogeneous cystic mass lying inside the inguinal canal just beneath the external oblique aponeurosis. There was no synchronous pathology from the ovaries or the pelvic round ligaments. (Figure 1).



Figure 1. — Ultrasonography and abdominal CT scan showing a homogeneous cystic mass, lying inside the inguinal canal, but not clarifying its origin or nature.

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Fig. 2A



Fig. 2B

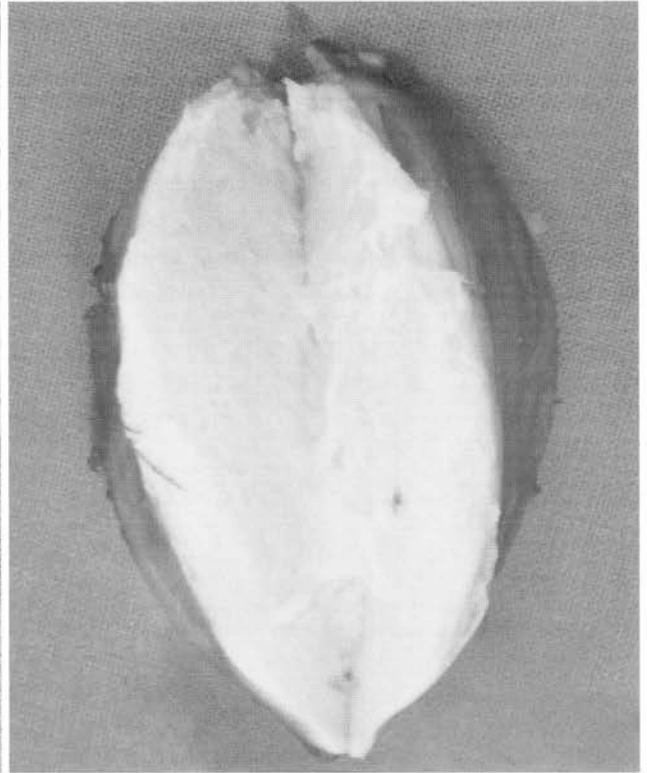


Figure 2. — A) The cyst distinctly deriving from the round ligament and lying on the floor of the inguinal canal. B) Incising the cyst, yellowish soft sebaceous material admixed with hair follicles was extruded.

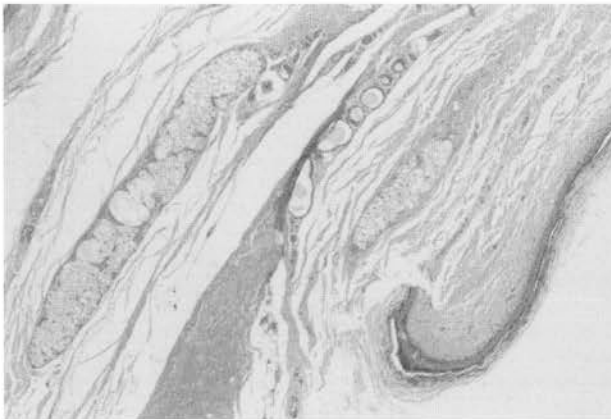


Figure 3. — The lining was composed of stratified flattened keratinized squamous epithelium. The underlying loose fibro-connective tissue contained hair follicles and sebaceous glands.

Excision of the cystic mass was carried out. The thin-walled cyst originated from the round ligament and was lying within the inguinal canal (Figure 2A). The cyst, measuring approximately 5 cm in maximum diameter, was noted to be firm, oval in shape and well delineated with a smooth external surface. After cystectomy, it was incised and yellowish soft sebaceous material admixed with hair follicles was extruded from its cavity (Figure 2B). Frozen section confirmed our initial suspicion of a dermoid cyst.

A detailed pathology examination revealed that the thin-walled lining was composed of stratified keratinized squamous epithelium. The basal layer showed melanin pigmentation. The

underlying loose fibro-connective tissue contained congested blood vessels, hair follicles and sebaceous eccrine and apocrine glands (Figure 3). No other mesenchymal cartilaginous, respiratory or gastrointestinal elements were present. Subsequently, histological appearance of the cyst was consistent with the diagnosis of a dermoid cyst, while intraoperatively it had been ascertained that it arose from the round ligament. The postoperative course was unremarkable and the patient was discharged the second day after surgery. Follow-up ultrasound examination at six months showed no recurrence of the excised dermoid cyst.

### Discussion

The round ligament represents one of the most unusual sites for a dermoid cyst to present. Although pathogenesis of dermoid cysts in the intrapelvic round ligament has been associated with that of ovarian mature cystic teratomas – claiming that totipotential germ cells desquamated from the gonad survive to form germ cell tumours [1-3], this association is not clear regarding inguinal round ligament dermoid cysts.

Dermoid cysts of the inguinal canal are rare, most commonly found in males. Two distinct theories exist on their pathogenesis: Dermoid cysts may represent congenital cutaneous inclusion cysts, probably resulting from the sequestration of cutaneous tissue beneath the lines of fusion, located along the lines of embryonic closure or be of germ cell origin as the extraovarian mature cystic teratoma [5]. The teratomatous origin of a dermoid cyst is documented if pathology examination demonstrates

mesodermal or endodermal components in the cystic wall. However, it would be difficult to rule out if no teratomatous element was found since monolayer expression of this tumor is also possible [5, 6].

Dermoid cysts in the inguinal region are usually manifested as non-tender, mobile, translucent, typically irreducible, slowly growing lesions. They are composed of keratin, a pasty yellow-white material protruding on pressure, hair follicles and sebaceous and apocrine sweat glands. Their thin wall is composed of stratified squamous epithelium surrounded by fibrous tissue.

Management of a dermoid cyst is highly related to the pathogenesis. The possibility of malignant degeneration in accordance with its ovarian counterpart cannot be excluded [5, 6]. On the contrary, an epidermoid cyst has a benign course and no potential to recur or metastasize [7]. The differential diagnosis between these two entities is only made after surgical excision and is based on the pathology report. A clear distinction can be established on the presence or absence of adnexal structures. Thus, epidermoid cysts lack the skin appendages, while dermoid cysts are characterized by their presence [6].

A case of malignant degeneration within a dermoid cyst of the round ligament has never been reported, although such a possibility theoretically exists. Local recurrence and metastasis also have not ever been described. Due to the dermoid cyst's benign course, complete excision without rupture is considered to be a safe and efficient treatment, provided that the pathology report definitively excludes malignant degeneration.

Subsequently, follow-up should be planned according to the definite pathology diagnosis. Thus, intermittent clinical and ultrasound examination is necessary for a

dermoid or teratomatous cyst but inappropriate for an epidermoid cyst.

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