

Teratoid Cyst with Nephrogenic Elements: A Rare Case

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ABSTRACT

Teratoid cyst is a type of dermoid cyst, the lining of which varies from stratified squamous to a ciliated respiratory epithelium containing derivatives of ectoderm, mesoderm and endoderm. The most common location of this cyst is oral cavity and presence of nephrogenic elements has been very rarely reported. We report a very uncommon rare case of teratoid cyst with nephrogenic elements in cyst wall and intestinal duplication cyst in a 6-month-old-female child.

Keywords: *Teratoid Cyst, Nephrogenic Elements, Intestinal Duplication Cyst.*

Introduction

In 1955, Meyer updated the concept of dermoid cyst to describe three histological variants, that is, the true dermoid, epidermoids and teratoid cyst. True dermoid cysts are cavities lined with epithelium with keratinization and skin appendages in cyst wall. Epidermoid cysts do not show skin appendages. The lining of teratoid cyst varies from stratified squamous to a ciliated respiratory epithelium containing derivatives of ectoderm, mesoderm and endoderm.^[1] Teratoid cyst is the least common of the three variants of dermoid cysts.^[2] Search by Ranabhat et al revealed oral cavity to be the most common location of this cyst. Other locations where these cysts have been reported in are mandible, submental region, large intestine, mediastinum, thymus, nasopharynx, spinal cord, kidney, and the eyes.^[3]

We report an unusual case of intestinal duplication cyst and teratoid cyst in a single patient with rare nephrogenic elements in the teratoid cyst wall, to the best of our knowledge such case with teratoid cyst with nephrogenic elements and intestinal duplication cyst together has never been reported before.

Only single case of teratoid cyst containing nephrogenic elements has been reported so far.^[4]

Case Report

6-month-old female child presented with vomiting of two days duration. Ultrasonography of abdomen and pelvis revealed well defined double wall cystic lesion measuring 10.2 x 4.8 x 4.4 cms extending from right hypochondriac region to inferiorly umbilical and hypogastric region. Possibilities included were bowel duplication cyst/

intraperitoneal cyst. Another scan revealed focal dilatation of colonic segment in left paraumbilical region. Both the kidneys appeared normal on sonography. Intraoperatively ascending colon duplication cyst was excised. Another left sided cyst, noted close to sigmoid colon, was also excised.

We received two specimens, larger one comprising ileocaecal junction, appendix and ascending colon. Attached parallel to the ascending colon was a tubular cyst measuring 14 x 4 x 4 cms [Figure 1.1] and containing clear to mucoid fluid. Second smaller specimen [Figure 1.2] of unilocular cyst measured 5.5 x 4 x 2.5 cms. Cut surface revealed solid grey white nodular excrescences measuring 0.2 to 0.5 cms in diameter. Cyst contained mucoid to clear fluid. No colonic segment was attached to this cyst.

On microscopy [Figure 2] duplication cyst was lined by squamous, gastric, colonic and respiratory type of columnar mucosal epithelium and had separate muscle coat from the intestinal wall. The final impression of this larger specimen was Intestinal duplication cyst.

The second smaller sample, revealed a cyst lined by squamous, gastric, colonic and respiratory type of columnar mucosal epithelium. Wall showed smooth muscle bundles and nodules of primitive and developing nephrogenic elements with formation of tubules and glomeruli. The final impression of this specimen was teratoid cyst with primitive and developing nephrogenic elements [Figure 3].

Discussion

The term dermoid cyst is used in medical science to include all the six types of keratin-filled cysts: epidermoid, dermoid, teratoid, teratoma, keratinous, and trichilemmal

cysts. Out of these six, teratoid cyst has been observed to be very rare.^[3]

Dermoid cysts are regarded as either congenital in origin, when they are sometimes known as benign teratomas, or acquired due, it is supposed, to traumatic implantation of epidermal tissue and then are sometimes referred to as epidermoid cysts. Congenital dermoids, or benign teratomas, which strictly are neoplasms with elements of all three germinal layers, arise commonly in the ovary, less so in the testis, and in midline sites. Here they theoretically arise as a result of failure of embryological fusion. The exact origin of teratomas of the gonads remains unclear, however, dermoid cysts have in fact been described in

many other locations: in the kidney, liver, colon, stomach, mesentery and lung.^[5]

Teratoid cyst are lined by epithelium ranging from keratinizing squamous to pseudostratified columnar respiratory epithelium with dermal appendages in the connective tissue wall along with derivatives of all three germ layers (ectoderm, mesoderm and endoderm).^[1]

The differential diagnoses in our case were: benign cystic teratoma, extrarenal Wilm's tumour, or a teratoid cyst containing nephrogenic tissue. Due to absence of immature blastemal elements, extrarenal Wilm's tumour was ruled out. Mature cystic retroperitoneal teratoma with



Fig. 1: Gross: Intestinal duplication cyst [Figure 1.1] and Second specimen of cyst showing grey white nodular excrescences in cyst wall [Figure 1.2].

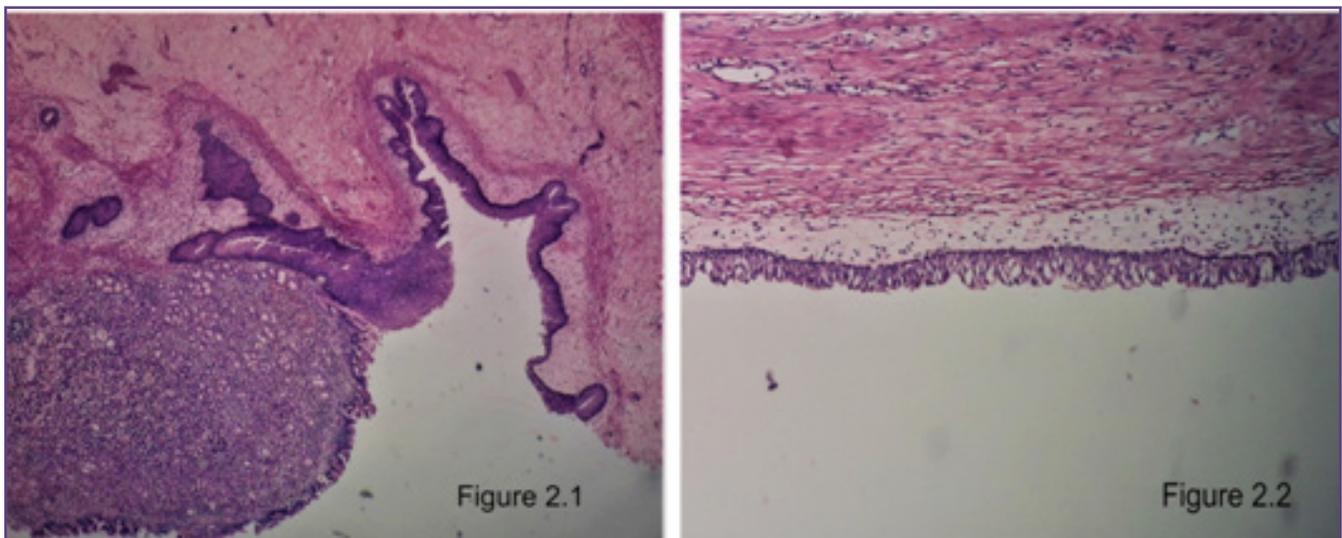


Fig. 2: Intestinal duplication cyst lined by squamous and gastric type of epithelium [HE x40], figure 2.1 and respiratory type of epithelium [HE x100], figure 2.2.

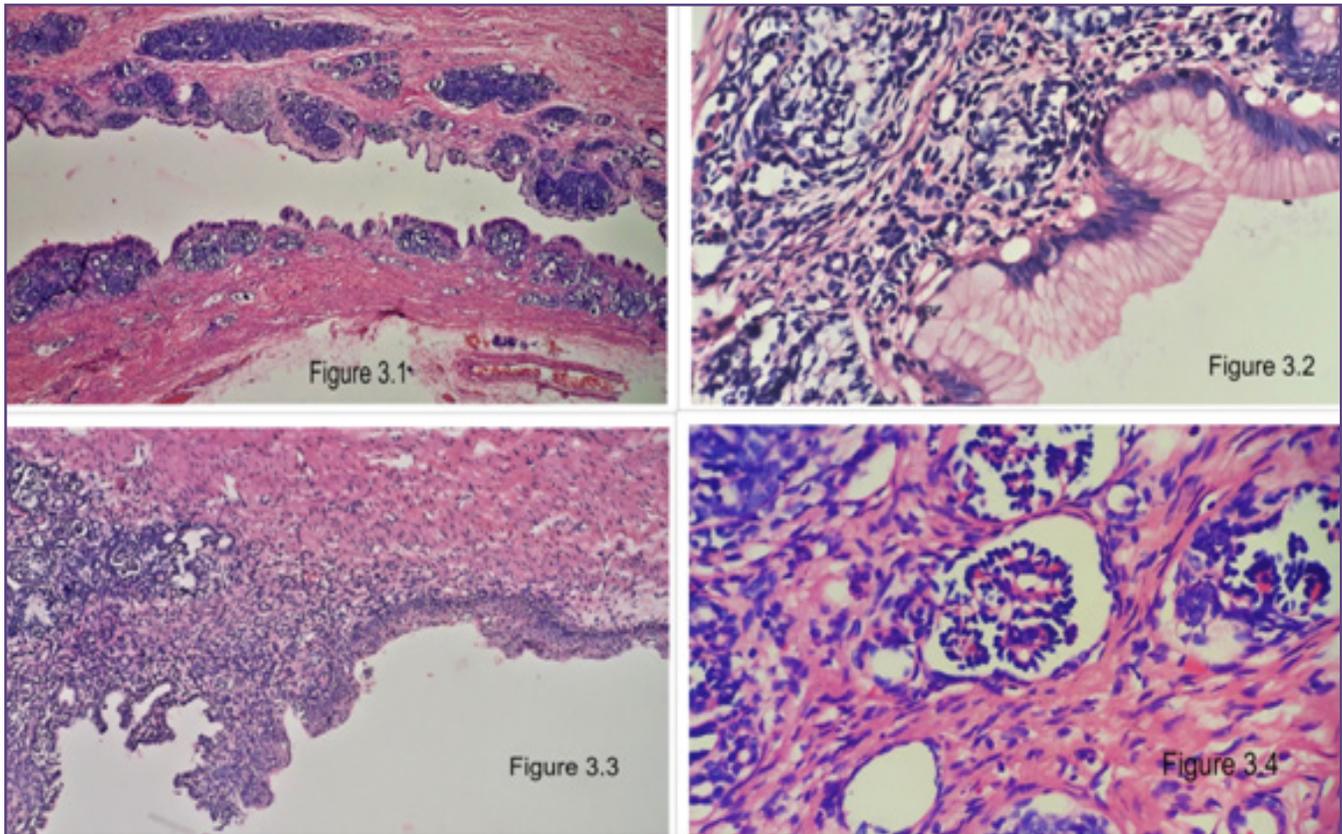


Fig. 3: Teratoid cyst lined by [Figure 3.1] respiratory [HE x40], [Figure 3.2]gastric[HE x400], [Figure 3.3]squamous and respiratory type of epithelium [HE x100]. [Figure 3.1-3.4]Wall showing smooth muscle and nephrogenic elements with formation of tubules and [Figure 3.4]glomeruli [HE x 400].

well differentiated renal elements is reported by Sinha et al.^[6] and a teratoid cyst containing nephrogenic tissue in a woman with a horseshoe kidney^[4] is reported by Stewart et al. Though, it was difficult in our case to differentiate between teratoma and teratoid cyst, we favoured teratoid cyst, as the usual characteristics of teratoma [like skin appendages, adipose tissue, cartilage] were not seen in our case and presence of nephrogenic elements in teratoma being only occasionally reported. Duplication of gastrointestinal tract is a rare congenital anomaly found in about 0.2% of all children. Although enteric duplication cysts can present at any age the vast majority of patients present during infancy. Although the exact aetiology is unknown, several theories have been proposed like split notochord (currently most favoured), partial twinning, persistent embryological diverticula or aberrant luminal re-canalization. Other rare causes included intrauterine trauma or hypoxia. For the diagnosis of an enteric duplication cyst, three essential characteristics are: (1) a well-developed smooth muscle coat; (2) mucosal lining found within some portion of the alimentary tract; (3)

contiguity to any segment of the alimentary tract.^[7] All these criterias were fulfilled in our case.

In patients with symptomatic colonic cysts, surgical resection is usually recommended in good operative candidates.^[8] Teratoid cyst was also excised in all the literatures studied.^[1,2,3,4]

Combination of these two entities has never been reported before, to the best of our knowledge.

Conclusion

Paediatric patients can present with multiple abdominal lesions. Teratoid cyst and intestinal duplication cyst are rarer such lesions. Hence reporting this case, with simultaneous occurrence of both the lesions in a single patient and presence of very uncommon nephrogenic elements in the teratoid cyst wall with its uncommon location of occurrence.

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Competing interests

None declared

Statement of informed consent

Not applicable, as identifying details of patient are not revealed.

Statement of Human and Animal Rights

Not applicable

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