Scientific Research Publishing

Open Journal of Pediatrics, 2023, 13, 276-283
https://www.scirp.org/journal/ojped
ISSN Online: 2160-8776
ISSN Print: 2160-8741

Abdominal Mass Revealing a Right Ovarian Cyst in a 2-Year-Old Infant: A Case Report

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How to cite this paper: Sacko, M.L.S., Keita, B., Barry, T.S., Sangare, M., Barry, M.M., Conde, M. and Agbo-Panzo, D. (2023) Abdominal Mass Revealing a Right Ovarian Cyst in a 2-Year-Old Infant: A Case Report. *Open Journal of Pediatrics*, **13**, 276-283.
https://doi.org/10.4236/ojped.2023.132033

Received: February 26, 2023
Accepted: March 25, 2023
Published: March 28, 2023

Abstract

Introduction: Ovarian cysts are rare pathologies in infants. They represent 1% to 2% of all abdominal tumors in children. Abdominal pain is the most frequent initial sign. Sometimes the discovery is fortuitous, revealed by an abdominal ultrasound. We report here the case of an ovarian cyst in an infant in order to clarify the diagnostic and therapeutic particularities. **Patient and observation:** 2-year-old infant, female, weighing 12 kg and with no particular pathological history, was admitted to our department for pain plus abdominal mass evolving for 2 months. The clinical examination had noted: a mass ranging from FID to hypogastrium, painless, of firm consistency, with regular contour, with a smooth and mobile surface in relation to the deep plane. The abdominal ultrasound performed had concluded to a mesenteric cyst. The treatment consisted of a monobloc total cystectomy with preservation of the healthy ovarian tissue by a transverse laparotomy under the umbilical. The postoperative course was simple; the histological study of the surgical specimen had concluded to a serous cystadenoma. **Conclusion:** Ovarian cysts are benign tumors in most cases. Abdominal pain is the most common initial symptom at any age. Sometimes they can be incidentally discovered by ultrasound. The preservation of healthy ovarian tissue in the rules of oncological surgery allows the preservation of subsequent fertility.

Keywords

Right Ovarian Cyst in Infants, Conservative Treatment

1. Introduction

Ovarian cysts are fluid-filled sacs in or on an ovary. It is difficult in children because the size limit from which a cyst must be considered pathological is not es-

tablished before puberty, although the threshold usually retained is 1 cm [1]. These are rare pathologies since they represent only 1% to 2% of all tumors in children. Abdominal pain is the most frequent initial sign at any age, with an acute onset in the majority of cases. The discovery of an ovarian mass is fortuitous and completely asymptomatic, revealed by an ultrasound requested for another indication [1] [2]. The diagnosis is sometimes suspected during the clinical examination of the child who may present with abdominal distension or a mass on palpation of the abdomen. Ultrasound allows the diagnosis of ovarian cyst by determining the size, location and internal composition [3]. The therapeutic attitude depends on the clinic, the result of the ultrasound, the age but also on any doubt as to the nature of the mass [4] [5] [6]. We report a case of ovarian cyst in infants to recall the diagnostic and therapeutic particularities of this pathology.

2. Observation

2-year-old female HM infant, weighing 12 kg, from Nzérékoré, received in consultation for abdominal pain and an abdominal mass evolving for more than 2 months.

The beginning of the symptomatology would be progressive marked by the occurrence of episodes of abdominal pain leading the parents to consult a doctor's office where a treatment was prescribed, consisting of metronidazole syrup and tributin syrup. Faced with the persistence of the pain, three (3) days later, the parents consult again in the same medical office where the abdominal ultrasound (**Figure 1**) carried out had concluded to a compressive-looking mesenteric cyst. This is how parents decide to consult our service for support.

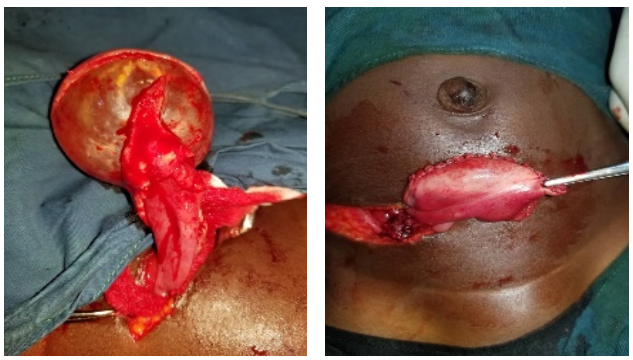
On physical examination: general condition was good; the abdomen slightly increased in volume, asymmetrical with a curve going from the right iliac fossa to the hypogastrium. We noted on palpation a mass of soft consistency, with a smooth surface, well circumscribed, with a regular contour and mobilizable in relation to the deep plane. At the end of the clinical and paraclinical examination, the diagnosis of an abdominal mass was made.

Figure 1. Ultrasound images of ovarian masses.

An exploratory laparotomy was indicated and revealed a large right ovarian cyst measuring approximately 10 × 10 cm in diameter (Figure 2). We proceed to a cystectomy with preservation of the ovarian tissue (Figure 3(a) and Figure 3(b)).

The pathological examination of the surgical specimen (Figure 4) concluded that there was an organic cyst of epithelial origin: serous cystadenoma. The postoperative course was simple with first-line healing of the operation wound.

Figure 2. Large cyst of the right ovary + left ovary.



(a) (b)

Figure 3. (a) Start of cyst cystectomy; (b) Appearance of the ovary after cystectomy.

Figure 4. Operative specimen (serous cystadenoma).

3. Discussion

Ovarian tumors in children are rare. They are mostly organic during childhood and functional after menarche. Gonadal pathologies are rare during childhood, the incidence is estimated at 2.6 cases per 100,000 girls [7]. During childhood, even fluid, these ovarian neoformations are often benign organic tumors but in 10% of cases there is a malignant contingent [8] [9]. While the benign and functional cystic pathology is very frequent from the first cycles, explained by the tonicity of the pulsatility of the gonadotropins at this period of life [10] [11].

The etiopathogenesis of cysts is not yet clearly defined. It is known that during the last third of life in utero, growing follicles appear in the ovary. This development takes place under the control of fetal pituitary gonadotropins and placental chorionic gonadotropin [4] [12] [13]. Macroscopically, these cysts are formed of a smooth wall closing a citrine liquid. On microscopic examination, the wall is composed of a fibrous tissue coated, on its internal face, with a follicular epithelium without cellular atypia or sign of inflammation [14].

The discovery may be fortuitous, most often during a systematic examination or during a systematic ultrasound [15] [16].

All THE clinical descriptions agree that adnexal pathology is characterized by its polymorphism [17] [18]. Ovarian cysts appear as abdominal or abdominopelvic masses, often unilateral, usually unilocular, rounded and well circumscribed. Most often, they are thin-edged, with liquid content, transonic, homogeneous [19] [20]. Their volume is variable, but usually moderate; their largest diameter varying from 30 to 50 mm [21], then Abdominal pain which is frequently encountered. They can sit in the iliac fossae, in the hypogastrium and sometimes they are diffuse. Their intensity and duration is variable, ranging from a surgical emergency picture that raises fear of a complication such as torsion of the appendix or intracystic hemorrhage, to vague chronic pain that resolves spontaneously [15] [18] [22].

Several imaging techniques are available and make it possible to establish the diagnosis of ovarian cysts, to assess the etiology, to carry out the extension assessment and to organize monitoring [23] [24].

The abdomino-pelvic echography makes it possible to find the ovarian mass and to specify its seat, its size, its echostructure, the existence or not of partitions, sediments, vegetations, intracystic calcifications. This examination has a specificity of 93% and a sensitivity of 80%, which makes it the gold standard for diagnosis [25]. It also helps to guide a possible puncture as well as the monitoring of patients before and after treatment [15] [17].

The diagnostic contribution of Doppler is controversial. The color Doppler can provide information on the vascularization of the mass. A frank interruption of the arterio-venous flow associated with heterogeneous images of the ovary is very in favor of a torsion of appendix. It suggests a malignant tumor in the face of significant neovascularization and high pulsatility indexes, but these signs are not constant [26].

The scanner and the MRI make it possible to specify the location of the mass and its relationship with the neighboring organs, in particular if the mass is heterogeneous. The existence of a fatty component mass associated with elements of ossification is characteristic of a dermoid cyst.

In the face of any ovarian mass, the preoperative dosage of tumor markers (αFP and βHCG) is essential, in order to guide the etiological diagnosis and eliminate a possible malignant component [16]. The elevation of αFP in the context of an ovarian mass confirms the highly malignant vitelline contingent of the tumor [15] [18] [27] [28]. In our patient, αFP was performed and the results were within normal limits.

Whereas those of βHCG correspond to a choriocarcinomatous secretory [18]. The latter was not carried out in our patient because at this age the ovary is physiologically quiescent, it is not yet functional, there is no activation of folliculogenesis, no secretion of sex steroids, the ovary contains its capital of primordial follicles whose maximum diameter is 10 mm [29].

The evolution of these ovarian cysts is variable and unpredictable. A large number of cysts decrease and disappear in the months following birth (6 months on average), which argues for the hypothesis of ovarian hyperstimulation by placental chorionic gonadotropins [30]. Some ovarian cysts present a less favorable evolution and give rise to complications, the most frequent of which is torsion of the cystic pedicle [12] [31] [32]. Other complications can occur such as intestinal, thoracic and renal compression, intracystic hemorrhage and cyst rupture [33].

The therapeutic attitude is controversial in the literature, given the existence of a possibility of spontaneous regression of the cysts in the months following birth. Some authors [16] [28] prefer to first consider conservative treatment based on regular ultrasound monitoring; this also allows early detection of a possible complication. This approach is therefore preferable to first-line surgery. But it should be remembered that the therapeutic attitude depends on the clinic, the ultrasound, the age but also on any doubt as to the nature of the mass [4] [5] [6]. The size is also a criterion of therapeutic choice. Indeed, the larger the cyst, the greater the chances of observing a complication.

Most pediatric series report the high prevalence of functional cysts in adolescents. Apart from any sign of complication, ultrasound monitoring can be offered for two to three months, until resolution [1] [2] [32]. No medical treatment has proven its effectiveness in the context of functional ovarian cysts.

Ultrasound-guided puncture in pediatrics is used, on the one hand, because of the absence of possible realization by endo vaginal way, on the other hand, its effectiveness not having been demonstrated.

Laparoscopy has a diagnostic and therapeutic role [17]. It makes it possible to recognize a complication (adnexal torsion, intracystic hemorrhage) and gives an idea of the macroscopic aspect of the lesion, allowing its nature to be predicted. Faced with the presence of a suspicious mass or the slightest doubt about the

feasibility of laparoscopic surgery (unaffordable cyst, large volume, adhesions), conversion to laparotomy is necessary.

Laparotomy can be performed through a Pfannentiel incision or through a midline incision below the umbilical. In our patient, a transverse of about 10 cm in the right middle abdominal fold was performed.

Abdominopelvic exploration must be carried out systematically (the tumour, the contralateral ovary, the uterus, the cul-de-sac of Douglas and the rest of the abdominal cavity) with sampling of peritoneal fluid for cytology [16].

Different techniques can be performed (cystectomy, lumpectomy, annexectomy). In our patient, we preferred a cystectomy with a closed cyst, trying to preserve as much of the ovarian parenchyma as possible for future fertility.

4. Conclusion

Ovarian tumors in children are rare, often organic with a malignant contingent in 10% of cases. The frequency of ovarian cysts in newborns and infants should be reconsidered. The etiopathogenesis of these cysts is not yet clearly defined.

The clinical expression of ovarian cysts is dominated by abdominal pain, the complexity of analyzing which can lead to diagnostic wandering leading to the indication of an abdominal ultrasound which is a key examination to evoke not only the diagnosis, to specify the condition of the contralateral ovary, to guide a puncture and to monitor the clinical evolution. The therapeutic attitude is controversial in the literature given the existence of a possibility of spontaneous regression of the cysts in the months following birth.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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