CASE REPORT

Umbilical Hernia Containing the Ileocecal Appendix

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Abstract

Umbilical hernia is a common finding in children. The presence of the ileocecal appendix in the umbilical hernia sac is rare and only a few cases of complicated umbilical hernia due to the incarceration or strangulation of the appendix are described in the literature. In this article, we report the case of a 4 year old girl with an asymptomatic and uncomplicated proboscis umbilical hernia with the ileocecal appendix incidentally found in the hernia sac during ambulatory repair surgery. We reviewed the main recommendations for the management of uncomplicated umbilical hernia on behalf of this case.

Keywords: Appendix; Cecum; Child, Preschool; Hernia, Umbilical/surgery; Ileum; Incidental Findings

Introduction

Uncomplicated umbilical hernia is a common finding in children, present in 10%-30% of newborns.[1] Umbilical hernia arises from the incomplete closure of the umbilical ring after birth, and may close spontaneously over time.[2] In the literature, there are rather few reports of complicated hernias with the incarceration or strangulation of the ileocecal appendix and even fewer cases of appendicitis within umbilical hernia.[3-5] There are also cases of umbilical hernias involving the bowel, omentum, epiploic appendix, an abscess due to gangrenous retrocolic appendix, Meckel diverticulum, or urinary bladder.[3-6]

In this article, we report the case of a 4 year old girl with an asymptomatic proboscis umbilical hernia submitted for elective surgical repair, with the incidental finding of a trapped ileocecal appendix in the umbilical defect. We found no other case in the literature of an umbilical hernia with a trapped appendix with no associated complications.

Case Report

Caucasian female term infant weighing 2,820 g and born by cesarean section. She maintained a heathy growth and development through life without any history of major health problems or previous surgery. At 4 years old, she was diagnosed by the family doctor with an umbilical hernia. She was then referred for a pediatric surgery consultation in our department. We confirmed the presence of a proboscis and reducible umbilical hernia approximately 1 cm in diameter with no associated symptomatology. The patient was observed for a six-month period but there was no evolution toward the resolution of the hernia. Surgical repair of the defect was subsequently explained and proposed to the parents, who accepted the procedure. The patient was submitted for elective repair of the umbilical hernia under general anesthesia in an ambulatory setting. A curved incision was made in a natural crease immediately below the umbilicus. The hernia sac was dissected from the skin and the presence of the hernia content was identified. The hernia sac was opened, and the ileocecal appendix was uncovered. The appendix tip was slightly congested. We explored and dissected the ileocecal appendix to its origin in cecum (Fig. 1). We performed a subsequent ligation of the mesoappendix and double ligation of the appendix, followed by appendectomy. The excised specimen was sent for anatomopathological examination. The defect was closed with a mattress suture using a 2/0 absorbable suture. Subcutaneous tissue and skin were closed with a 4/0 absorbable suture followed by a compressive dressing. The anatomopathological results revealed an ileocecal appendix with mucosal lymphoid hyperplasia and congested wall, without any signs of dysplasia or malignancy.

The postoperative period was uneventful. The patient tolerated food orally a few hours after surgery and was discharged home on the same day. She was discharged from the pediatric surgery consultation, after a one-month post-operative follow-up, without complaints or complications and with a good cosmetic result.

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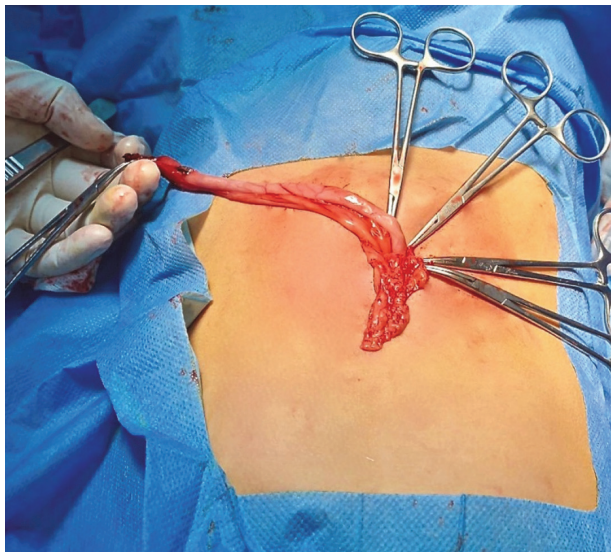

Figure 1. Ileocecal appendix exposed through the umbilical defect after opening of the hernial sac.

Discussion

Umbilical hernia prevalence is increased in premature, low birthweight, females and African-American infants.[3] In the present case, none of these risk factors were present, except for the female sex.

The prevalence of umbilical hernia at 1 year of age ranges from 2%-10%.[1] The natural history of umbilical hernias shows that the majority of the cases will close spontaneously by the age of 3-4 years old, but resolution in later childhood is also possible.[1,2,7]

Umbilical hernias were classified according to the defect size[8]:

- Fascial defects lower than 0.5 cm were considered small hernias;
- Defects between 0.5 and 1.5 cm were considered medium hernias;
- Defects bigger than 1.5 cm were classified as large hernias.

The size of the umbilical hernia has been associated with the ability to close without surgery, with larger defects less likely to close.[1,9]

Surgical repair of an umbilical hernia is a minor and low-risk procedure.[2] Complications, including seroma, hematoma, site infection, abscess, granulation, or keloid formation, were described in less than 1%-2% of cases, depending on the series.[1,8] Recurrence of umbilical hernia after surgery has also been reported with an incidence of 0.27%-2.44%.[2] The anesthetic risk must also be taken into account, especially in children younger than four years old who are more prone to respiratory and neurologic complications.[10]

Therefore, many guidelines encourage waiting until the patient is 4 years old for repairing asymptomatic umbilical hernias, regardless of the size.[2,4,11] However, in symptomatic and complicated umbilical hernias, early intervention is vital.[1,2]

The presence of ileocecal appendix in the umbilical hernia may be explained by the embryologic development of the primitive intestine that herniates through the umbilical ring to elongate. In order to return to the abdominal cavity, the intestine has to rotate 270º counterclockwise.[12] After this process, the ileocecal appendix rotates to the posteromedial aspect of the cecum in most cases, but its final position is variable. The ileocecal appendix is located intraperitoneally in 95% of cases, with the appendix tip behind the cecum in 65% or in the pelvis in 30% of the cases. The other 5% of the ileocecal appendix cases are extraperitoneal and may be found in a retrocolic or retrocecal position. Rarely, the ileocecal appendix presents in an umbilical hernia as described in our case.[5] In these cases, increased intra-abdominal pressure may force the ileocecal appendix into the defect, leading to a complicated umbilical hernia with incarceration or strangulation.[4]

The appropriate management of an umbilical hernia with the ileocecal appendix within the hernial sac may include an appendectomy.

In the case described herein, there was a medium-sized umbilical hernia, according to the Lassaletta classification, with no spontaneous closure at the age of 4 years old and no positive evolution toward resolution in the six-month follow-up period. Despite the ileocecal appendix found in the abdominal defect, our patient experienced no symptoms or clinical signs of complication. However, we believe that, in this case, there could be a risk of developing umbilical hernia complication, since the trapped ileocecal appendix was already showing signs of congestion as confirmed by an anatomopathological exam. Therefore, surgical repair with an appendectomy may have prevented a more complicated outcome in this case.

We presented a case of a 4 year old girl with a medium asymptomatic proboscis umbilical hernia with the ileocecal appendix found in the hernia sac, which is a rare occurrence. The patient was submitted for hernia repair and an appendectomy in an ambulatory setting, according to the major recommendation for umbilical hernia management. We believe that waiting until the age of 4 years old to perform the surgical repair allowed for a more secure procedure, reducing the risk of anesthetic complications, but also preventing a possible complication due to the incarceration or strangulation of the ileocecal appendix found in the hernia sac.

WHAT THIS CASE REPORT ADDS

- Recommendations encourage waiting until 4 years old for repairing asymptomatic umbilical hernias, regardless of the size.
- To the best of our knowledge, this is the first case described in the literature of a patient with an uncomplicated umbilical hernia containing ileocecal appendix incidentally found during elective repair in an ambulatory setting.
- Accurate diagnose and treatment of umbilical hernias may prevent a possible complication such as appendix incarceration.

Conflicts of Interest

The authors declare that there were no conflicts of interest in conducting this work.

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Consent for publication was obtained.

Confidentiality of data

The authors declare that they have followed the protocols of their work center on the publication of patient data.

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Hérnia Umbilical Incluindo o Apêndice Ileocecal

Resumo:

A hérnia umbilical é um achado comum na criança. A presença do apêndice ileocecal no saco herniário é rara e existem apenas alguns casos descritos na literatura de hérnia umbilical complicada por encarceramento ou estrangulamento do apêndice ileocecal. No presente artigo, apresentamos o caso clínico de uma menina de 4 anos com hérnia umbilical probóscide, assintomática e não complicada com o apêndice ileocecal identificado incidentalmente no saco herniário durante a correção cirúrgica em regime de ambulatório. A propósito deste caso clínico, foi feita a revisão das principais recomendações para a abordagem da hérnia umbilical não complicada.

Palavras-Chave: Achados Incidentais; Apêndice; Cego; Criança Pré-Escolar; Hérnia Umbilical/cirurgia; Íleo