Incarcerated umbilical hernia in children

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Abstract

Introduction: Umbilical hernia is common in infants and children. The true incidence is unknown because many umbilical hernias resolve spontaneously. Historically, incarceration is considered rare (1-2); however, it seems to occur more frequently than it is generally believed. Most of the literature related to incarceration comes from African countries, where the black community predominates. It should be noted that umbilical hernias tend to occur more commonly in the African population; nearly 10 times more, than in whites. It seems that this trend is increasing in France and England as well, where most of the population is white. The same change appears to be happening in Iran.
Materials and Methods: A retrospective analysis of umbilical hernias at our institution was performed. Patients presented to our institution over a period of eight months, from March 21st to October 20th 2006.
Results: Of the fifteen cases of umbilical hernias during the 8 month 4 had incarceration (26%). There were 3 girls (75%) and 1 boy (25%). In all the 4 cases of incarceration hernias had a diameter of more than 1.5 cm. Two patients underwent manual reduction and the hernia was repaired the following morning and two patients underwent operation the same day the symptoms began, since the hernia was irreducible. Intestinal resection was not indicated in any of our patients; however omental resection was done in one of them. All patients had an uneventful post-operative course and there was no mortality.
Conclusion: Incarcerated umbilical hernia is not as uncommon as it was thought to be. Therefore, a more active therapeutic approach is recommended even in smaller hernias.

Keywords

- children
- umbilical hernia
- complications
- hernia ring

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Introduction

Umbilical hernia is common in infancy and childhood. The true incidence is not known since many of them resolve spontaneously. Some of the main predisposing factors for this condition are race and prematurity.[1-2] The majority of cases resolve spontaneously before the age of 4 years unless the neck of the sac has a diameter greater than 2 cm.[3] Since complications such as incarceration and strangulation are rare, conservative management can be applied.[1-6] We report our experience of umbilical hernia at Vali-e-Asr General Hospital Zanjan University of Medical Sciences (ZUMS).

Material and Methods

This retrospective study was undertaken to reappraise the problem of incarcerated and strangulated umbilical hernias in children in Zanjan, Iran. A total of 15 children below the age of 18 with umbilical hernias were admitted to Vali-e-Asr General Hospital, ZUMS between March 21st and October 20th 2006 and their hospital records were studied.

The main outcome measures included incarceration and strangulation rate, resection rate and wound infection.

Results

Fifteen children with umbilical hernias were admitted during this 8 month. The overall incarceration rate was 26%. All the patients had acute incarceration. There were 3 girls (75%) and 1 boy (25%). Three were infants and one was a teenager. Mean age of the infants was 13 months. The teenager was 18 years old and had a past medical history of cirrhosis with ascites. In all the 4 cases of incarceration hernias had a diameter of more than 1.5 cm. Two patients underwent manual reduction and the hernia was repaired the following morning, after peritonitis was excluded. The other two patients underwent operation the same day the symptoms began, since the hernia was irreducible. In all patients standard repair of the umbilical hernia was performed. Intestinal resection was not indicated in any of our patients; however omental resection was done in one of them. All patients had an uneventful post-operative course and there was no mortality.

Discussion

Significance of umbilical hernias vary considerably, from a risk of strangulation which require immediate surgical repair to reassurance and conservative management.[1] The majority of cases of umbilical hernias close spontaneously by the age of 4 to 5 years thus surgery is not indicated unless: the child is undergoing an operation for other reasons, the fascial defect (which is more important than the size of the external protrusion) is more than 2 cm with thin hyperpigmented skin or the hernia has caused problems for the family. Walker in 1967 proved that fascial defects less than 1 cm will close and those larger than 2 cm rarely close spontaneously. One in ten of the umbilical hernias which have not been repaired in childhood, persist to adulthood and the risk of incarceration is higher in adults than in children.[1] In a 15-year period at John Hopkins Hospital only 7 cases of incarcerated umbilical hernias occurred -omentum was the most frequent incarcerated organ- but 101 cases of adults with incarcerated umbilical hernia were admitted during the same time period.[7] A literature review has suggested the incidence of this complication to be approximately 1:1,500 umbilical hernias.[2]

In Western Australia the incidence of acute complicated umbilical hernia which requires operation is 1:3000 to 1:11,000.[3]

Most studies regarding incarceration are from African countries-with predomination of the black race- and umbilical hernias are 10 times more prevalent in them than in whites.[8,9&4] It appears that the same is true in France[10] and England[2,7], where the white race predominates. The expectant management approach to this condition should continue. Parents are reassured that the large size of the hernia is not important in the risk of strangulation as much as the size of the hernia orifice is in this regard.

It must be mentioned that this a pilot study that took

place at a University Teaching General Hospital – not exclusively a pediatric center - during a short time. It is recommended that further studies are performed on larger scales during longer periods.

Conclusion

Incarcerated umbilical hernia is not as uncommon as it was thought to be. Therefore, a more active therapeutic approach is recommended even in smaller hernias.

Conflict of Interest

There is no conflict of interest.

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