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Presentation and Management Outcome of Umbilical Hernia in Children at the University Teaching Hospital of Brazzaville.

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Background: ***This study was aimed at determine the epidemiology, clinical and treatment outcome of childhood umbilical hernia at the University Hospital of Brazzaville.***
Methods: ***It was a retrospective study undertaken conducted over a 15 months period from 1st January 2014 to 31st March 2015 in the pediatric surgery department of the University Teaching Hospital of Brazzaville. The study population included both male and female children under the age of 15 who underwent surgery for umbilical hernia. The study variables included the demographic and clinical features and management outcome of patients with umbilical hernias. Xi² test was used to compare categorical variables. The significance threshold was set for a value of p <0.05.***
Results: ***During the period under review, 1152 children were hospitalized, of whom 185 were diagnosed with hernia including 98 (8.5%) who had umbilical hernias, a frequency of 8.5% of all hospitalizations and 53% of hospitalizations for hernias. The sex ratio was 2.3. The average age was 3.8 years (range 1 month to 15 years). Abdominal pain was the most frequent reason for consultation. The neck diameter was less than 1 cm in 51% and greater than 1 cm in 49% of cases. Surgical treatment was done in all our patients. The average hospital stay was 1.5 days. The surgical site infection was the main complication in 6.1% of cases.***

Keywords: umbilical hernia-child-Brazzaville.

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Introduction

Umbilical hernia (UH) is an anomaly related to a delayed closure of the umbilical ring. It is manifested by an expansive swelling, reducible appearing in any effort creating a hyper intra-abdominal pressure[1]. Its frequency in children varies between 5% and 20%[2].

It is a benign disease but may develop life-threatening when it is complicated. The morbidity and mortality related to the UH is low. Treatment is surgical and based on the closure of the umbilical ring either by sutures either by umbilical plasty. The objective of this study was to determine the demographic, clinical presentation and treatment outcome of umbilical hernia at the University Hospital of Brazzaville.

Patients and Methods

It was about a retrospective study covering the period from 1 January 2014 to 31 March 2015, 15 months, conducted in the pediatric surgery department of the University Hospital of Brazzaville. Had been included, children of both sexes aged from 0 to 15 years, underwent emergency surgery or elective surgery for an umbilical hernia complicated or not. We did not include children with non-operated umbilical hernia.The tests were conducted sequentially at 1 month and 3 months postoperative.Data were collected from hospital records of pediatric surgery and the operating room of the University Teaching Hospital of Brazzaville.

The studied variables were epidemiological, clinical, therapeutic and outcome. The xhi² test was used to compare categorical variables. The significance threshold was set for a p-value of <0.05.

Results

During the study period, 1152 children were hospitalized in the pediatric surgery department; among them 185 for hernia including 98 for umbilical hernia, corresponding to a frequency of 8.5% of all hospitalizations and 53% of hospitalizations for hernias. They were 69 boys and 29 girls with a male to female sex ratio of 2.3: 1. The Patients' ages ranged from 1 month to 15 years with an average age of 3.8

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years. The children were seen in outpatient consultation clinic in 79 (81%) of the cases and in 19 (19%) were seen as emergency cases (Table 1).

Table 1. Distribution of Children According to the Chief Complaint

Presentation	Number (N = 98)	Percentage (100%)
Umbilical pain	77	78.5
Reducible swelling	18	18.3
Irreducible swelling	11	11.2
Vomiting	2	2.0
Abdominal bloating	1	1.0

The diameter of the neck was less than 1 cm in 50 cases (51%) and greater than 1 cm in 48 cases (49%). Umbilical hernia was uncomplicated in 79 (80.6%) and strangulated in 19 (19.4%) of the cases. The diameter of the neck was less than 1 cm in 50 (51%) of children of which 11 (11.2%) had a strangulated. In 39 (39.8%), the hernias were uncomplicated. The diameter of the neck was greater than 1 cm in 48 (49%), including in 8 (8.2%) of the children who had complicated hernia and in 40 (40.8%) which were uncomplicated. However, there was no statistically significant difference (p = 0.7) between the diameter of the neck of the ring and the occurrence of strangulation. The most frequent pathological associations were inguinal hernia in 30 (31%), hydrocoele in 4 (4.1%) and cryptorchidism in six (6.1%) of the cases.

All children were treated with conventional surgery. A small median laparotomy was made in children who had a strangulated umbilical hernias. A transversal skin incision below the umbilicus was performed in other cases. The neck of the ring was closed by sutures in all children. For aesthetic reasons, plastic reconstruction of the umbilicus with resection of the excessive umbilical skin was made in nine (9.2%) of children, who had a very large hernia. Postoperatively, six children had surgical site infection (SSI). The postoperative period was uneventful in 92 (93.9%) of children. After a follow-up of 3 months, there were two (2%) of hernia recurrence considered to be secondary to subcutaneous infection. We registered no cases of deaths. The average hospital stay was 1.5 days with extremes of 1 and 6 days.

Discussion

Umbilical hernia is a common condition in black Africa [3, 4]. The 8.5%frequency found in our study is close to that of several African, European, and US authors [2, 5, 6]. The average age of our patients is similar to that reported by other authors [3,7, 8]. The male predominance can be explained in part by the anatomical features of the umbilical region in boys [3]. These results corroborate with those of some studies [4, 5, 8].The diagnosis of hernia is mainly clinical [4]. In general, the UH is not a painful condition [4]. Abdominal pain was the most frequent reason for consultation in our study; this could be explained by the fact that children consult late and therefore often at the stage of complication in our country[9].

The neck of the ring less than 1 cm was predominant in our study; this observation was made by Harouna et al[10] in Niger. In our series, the diameter of the neck did not influence significantly the occurred complications (strangulation). Our results are contrary to some authors report that the diameter of the ring's neck is inversely proportional to the risk of complications in the UH [4, 6, 7].The repeated obstruction is serious and can lead to a constriction with a risk of intestinal lesions [3, 5, 7, 10].Treatment of UH is strictly surgical and should be systematic upon discovery of the disease [10, 11].

The average hospital stay was shorter (1.5 days) in our series. However, some authors report an average of 2.5 days of hospitalization [3]. The postoperative outcome of an uncomplicated umbilical hernia is usually uneventful [3, 10, 12]. Morbidity is usually dominated by the risk of infection that can lead to disunity and recurrence [2]. The absence of deaths could be explained partly by the good condition of the children at the admission, on the other side by the early management in the treatment.

Conclusion

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Umbilical hernia is relatively common in children at the University Teaching Hospital of Brazzaville. For any abdominal pain in children, the practitioner should search for an umbilical hernia. The surgical treatment is well codified for reducing morbidity and mortality.

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