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Impact of Socioeconomic Status on Development of Incarcerated Inguinal Hernia in Children Treated in Gezira National Center for Paediatrics Surgery (GNCPS)

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Objectives: To determine the relation between socioeconomic status and development of incarcerated inguinal hernia among children presented to (GNCPS).

Results: 43 case presented with incarcerated inguinal hernia within the study period those <5Yrs were 40 (93,0%) from 5-10 yrs were 2 (4,7%) while 1 (2,3%) was more than 10 yrs. We have 42 male and 1 female patient the waiting time for surgery was 3 months in 14 (32,6%) while it was 3-6 months in 10 cases (23,3%) and more than 6 months in 19 (44,2%).

Keywords : incarcerated inguinal hernia, manual reduction, socioeconomic effects.

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Most of our patient came from rural areas constituting 31cases(72,1%) while there was 12 (27,9%).This indicate that most of studied patient from rural areas. Intra operatively the content was small bowel in 24 (55,8%) while in 2 (5,4%) it was large bowel in 2 (4,7%) and testes in 5 (11,6%).the condition of the contents was viable in 31(72,1%) while dusky in 2 (4,7%) and gangrenous bowel in 1(2,3%).

Conclusion: Incarcerated inguinal hernia increases in patients with low socioeconomic class.

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I. INTRODUCTION

Studies on incarceration and its socioeconomic implications have yielded interesting results. The underdeveloped countries have increase in the risk of incarceration by three-folds, while reduction has been made at a low rate of 34% because these patients attended the hospital late.⁽¹⁻²⁾

Classically, the child would present with painful and persistent inguinal swelling. There may be redness and tenderness on examination. Abdominal distension and signs of intestinal obstruction may set in if diagnosis is not made early. Unless there is clear peritonitis or bowel compromise, attempt should be made to manually reduce the incarcerated hernias by using a technique called taxis. In this technique, with the infant relaxed (using sedation if necessary), gentle inferolateral

pressure is applied to the incarcerated hernia with some pressure from above to straighten the canal. Approximately 80% of incarcerated inguinal hernias can be reduced using this technique⁽³⁾. Because of the high rate of early recurrent incarceration, it is recommended to admit these children and then do the surgery 24 to 48 hours later after the edema has subsided. Any child with an incarcerated hernia that cannot be reduced must undergo immediate operative repair. It is important not to reduce the hernia under anesthesia before the incision in order to inspect the incarcerated bowel for evidence of strangulation. In girls, an incarcerated ovary may be present in the hernia sac. If reduction is unsuccessful, there is a risk of vascular compromise from ovarian torsion occurring in as many as 33% of cases. Immediate repair can prevent this complication and is recommended by multiple authorities^(3,4,5).

II. PATIENT & METHODS

The author will use non-probability-based, purposeful-convenient sampling. All subjects presented to the National center of paediatrics surgery with incarcerated inguinal hernia. Some candidates were eliminated, and only those who fulfilled the inclusion criteria were considered as the final study sample.

Patient presented with incarcerated inguinal hernia with obstructive symptoms will be admitted, kept fasting, fluid therapy, NG. tube, catheter. Investigations were request in form of CBC, UG, RFT and electrolytes they candidate for General anesthesia with halothane. all candidates will receive injectable antibiotics. supine position, scrubbing with Antiseptic solution. incision will be transverse inguinal. Exploration of the contents will be done then managed accordingly. hernia sac will be excised and closure of the wound. post operative follow up in form of recording the vital signs, injectable antibiotics intravenous fluids and paracetamol suppositories as form of analgesia. They discharged to be seen in referred clinic after a week for assessment of general condition and the wound.

For those patients presented early with no features of intestinal obstruction we will apply manual reduction(MR).

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III. STATISTICAL ANALYSIS

Data will be coded and fed in a computer to handle statistical and mathematical procedure, to display the analyzed data and present them graphically using SPSS software (statistical package for social sciences).

IV. RESULTS

The overall number of patients seen with inguinal hernia in (GNCPs) during the study period (from Jan.2011-Jan2013) were 722 cases. from this number there were 43 case presented with incarcerated inguinal hernia. Regarding age distribution < 5 Yrs were 40 cases (93%). from 5-10 yrs were 2 cases (5,4%) while 1case (2,3%) was more than 10 yrs figure(1). The males were 42 cases (97,7%) while the females was one case(2,3%), the waiting time for surgery was 3 months in 14 cases (32,5%) while it was 3-6 months in 10 cases (23,3%) and more than 6 months in 19 cases (44,2%) Table 1. (6). patients from Gezira state were 42 cases (97.7%) and there was 1 case (2.3%) from out Gezira state. within the Gezira state We noticed that most of our candidate came from rural areas 31 cases (72,1%) while 12 cases (27,9%) from urban areas. All candidates 43 cases (100%) presented with irreducible inguinal lump with positive silk sign. The affected site was right in 27 cases (62,8%) while it was left in 15 cases (34.9%) and bilateral in 1case (2.3%).

28 cases (65.1%) present with obstructive symptoms while not in 15 cases (34.9%). Intra operatively transverse inguinal incision was applied, the contents were small bowel in 24 cases (55,8%) while in 2cases (4,7%) it was large bowel and testes in 5 cases (11,6%).the condition of the contents were viable in 31 cases (72,1%) while dusky in 2 cases (4,7%) and gangrenous bowel in 1 case (2,3%) that required resection & anastomosis. simple reduction was performed in 40cases (93%) while hot wrapping done in 2 cases (4,7%) and resection & anastomosis done in 1 case (2,3%). Regarding scrotal swelling post operatively was 27 cases (62,8%) while was not found in 7 cases (16,3%) Table (1).

Figure 1

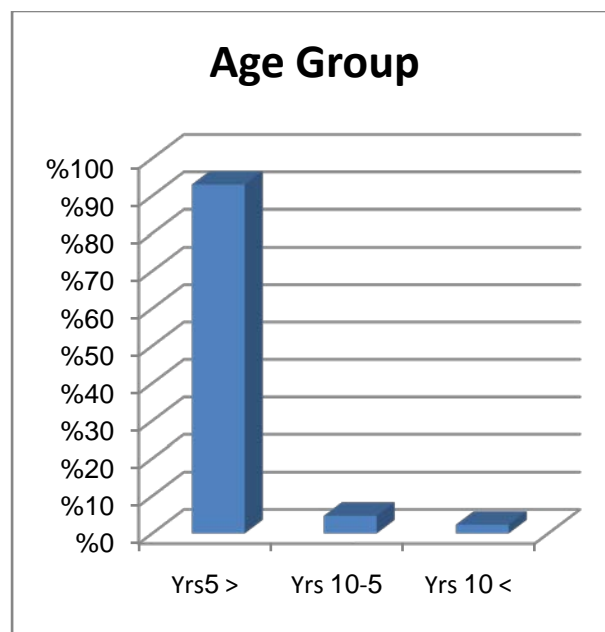


Figure 2

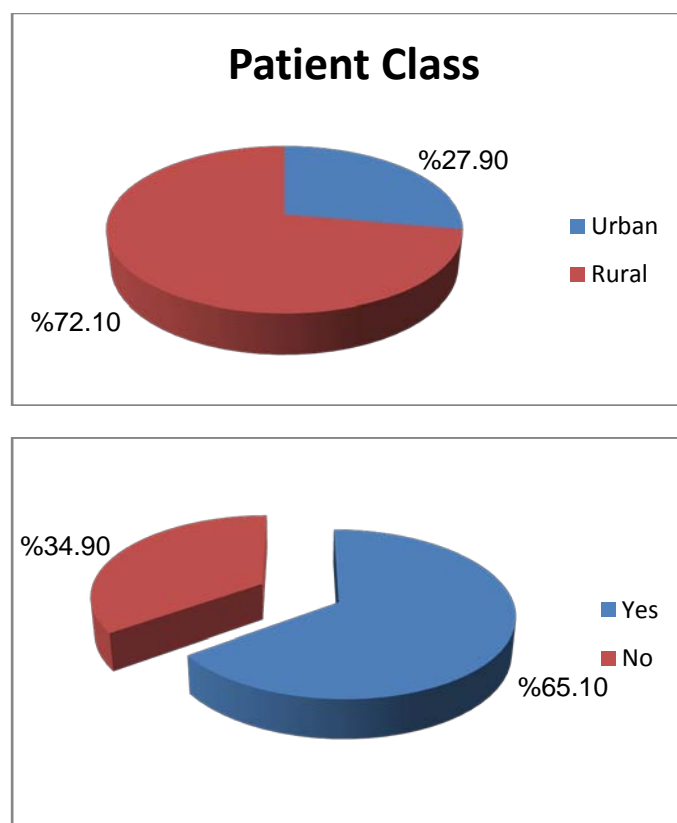


Table 1 : Scrotal Swelling

Valid	Frequency	Percentage
Yes	27	62.8%
No	7	16.3%
Total	34	79.1%

- The remaining 9 (20.9%) were not operated (manually reduced)

V. DISCUSSION

The total number of patients seen with inguinal hernia in (GNCPS) during the study period were 722. Out of this number there were 43 (5.9%) cases presenting with incarcerated inguinal hernia.

In this study, 40 patients (93%) were under 5 year of age and 2 cases (4.7%) under 10 year of age and 1 case (2.3%) was >10 year figure(1). This study has shown that incarceration is more frequent under 5 year of age and also that the incidence of incarceration decreases by increasing in age. In comparative to literature review the incidence of pediatrics inguinal hernia is highest during the first year of life and then gradually decreases thereafter. One-third of children undergoing surgery for hernia are less than 6 months of age.⁽⁶⁾

Most of the patient came from rural area 31 cases (72.1%) while 12 cases (27.9%) from urban areas related to Gezira state fig.(2), perhaps this may indicate the lower educational status in our rural areas and their lack of awareness towards this problem. The fact that inguinal hernias are not self-limiting and that there is a risk of complications dictate the need for expedient surgical repair.⁽⁷⁾

Among our study we found that 28 cases (65.1%) of patients underwent surgical exploration from the start because they present late with symptoms and signs of intestinal obstruction. while only 15 cases (34.9%) were managed initially by manual reduction (MR). We observed that those presented with no obstructive features came from areas near the hospital and presented rapidly when they noticed the lump became irreducible.

A wait time for surgery of more than 14 days was associated with a doubling of the risk of incarceration. The overall rate of incarceration is comparable to those reported by others.⁽⁸⁻⁹⁾

In a retrospective report of institutional-based data, Stylianou and colleagues⁽¹⁰⁾ reviewed all cases of children with an incarcerated hernia who presented to an emergency department. They calculated a risk of hernia incarceration of 9% related to a mean wait time of 8 days (range 0.5–28 days). we have long waiting time in comparable with above results we have a minimum waiting for at least 3 months and this had been explained by shortage of resources and overloaded hospital work. Our result showed that the waiting time was < 3 months in 14 cases (32.6%) while it was 10 cases (23.3%) waiting for 3-6 months and 19 cases (44.2%) in a period more than 6 months. We noticed that most of our patients wait 6 months or more after booking for surgery this may contributed to a lot of factors such as lack the parents information regarding this problem, traditional concepts, socioeconomic and financial factors.

Among our patients we have 15 cases (34.9%) presented with no features of intestinal obstruction successful attempt of (MR) was applied for 9 cases while failed in 6 cases so open surgery was carried out. For those manually reduced admission for 24 hrs later for observation then operated within the next 24hrs, this going with the study done by Gahukamble and Khamage whom concluded that all children with inguinal hernia should have hernia repair within 5 days after reduction of incarceration as a precaution against recurrent incarceration.⁽¹¹⁾

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