IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 18, Issue 11 Ser.1 (November. 2019), PP 45-49
www.iosrjournals.org

A Prospective and Retrospective Study Of Intussusceptions above One Year Age Children in a Tertiary Care Hospital

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Abstract
Introduction: *Intussusception is derived from latin words "intus" (within) and "suscipere" (to receive). Intussusception is the invagination of one part of the intestine into another. It is one of the most common causes of acute small bowel obstruction in the same age group. About 75% of cases of intussusceptions occur within the first 2 years of life and more than 40% between 3 and 9 months of age. The incidence of intussusception is said to be related to seasonal variations usually correlating with viral infections.*
Materials and Methods: *Between January 2014 to December 2016 in a tertiary level Hospital I took sixty clinically & Ultrasonologically diagnosed cases above one and below twelve years of Intussusceptions ,resuscitation followed by non-operative where suitable but most of the cases operations were needed, either manual reduction or resection anastomosis.*
Results: *In this article we plan to study Intussusception in children above one year but below 12 years of age. we had identified various clinical Presentations, types, etiologies, mainly whether any Pathological Lead point(PLP) present or not, followed by management done & post-surgical outcome of suspected cases of Intussusceptions above one year of age in a period of January 2014 to December 2016 we had found sixty cases of Intussusceptions above one year of age .We had found only 15 cases with pathological lead points out of 59 cases ,one case died before any surgical intervention. The resection rate were very high 35.6% (21 of 59); no spontaneous reduction, 64.4% (38 of 59) were reduced manually. Although in most of the studies it has been observed majority of the cases above year there are definite pathological lead points 40 to 60%, but in our study only 25.42% with PLP, 57.62% were idiopathic, but resection rate were very high about 35.6%.*
Conclusion: *PLP found only 15 cases aged greater than one year out of 59 , but in our study only 25.42% with PLP, 57.62% were idiopathic , so it very less than which were found in a number of other studies. So, in conclusion from our study still idiopathic cause was much higher in comparison to PLP.*
Key Words: *PLP-Pathological lead points, intussusceptions.*

Date of Submission: 19-10-2019 Date of Acceptance: 05-11-2019

I. Introduction

Intussusception is derived from latin words "intus" (within) and "suscipere" (to receive). Intussusception is the invagination of one part of the intestine into another. It is one of the most common causes of acute small bowel obstruction in the same age group.[1] About 75% of cases of intussusceptions occur within the first 2 years of life and more than 40% between 3 and 9 months of age. The incidence of intussusception is said to be related to seasonal variations usually correlating with viral infections.[2]

It is often quoted that Intussusception in older children has some definite lead point though studies in this regard is scanty in eastern India.[3]

The classical presentation of intussusception is an infant with intermittent, crampy abdominal pain sometimes associated with "Red currant jelly" stools and a palpable mass on physical examination. It can be difficult to diagnose as, 15% of cases may not have the classical colicky pain.[4]

80 to 95 percent of pediatric intussusceptions are ileocolic. Other types in decreasing order of incidence are ileoileal, ileoileocolic, ileocecocolic, colocolic and jejunojejunal. Occasionally, an intussusception may have an identifiable lesion that serves as a lead point, drawing the intussusceptum into the distal bowel by peristaltic activity.[5] Although spontaneous reduction occurs, an intussusception may lead to increased morbidity and even mortality due to sepsis if not recognized early and treated appropriately. Many improvements and innovations in the diagnosis and a number of modalities of treatment of intussusceptions from hydrostatic to pneumatic reduction technique have enriched our understanding. At present, diagnosis and especially treatment represent a

combined effort between the pediatric radiologist and pediatric surgeon. Intussusception is one of the most common causes of acute abdominal pain in infancy.[6]

The classic clinical trial of acute abdominal pain (colic), Red currant-jelly stools or hematochezia, and a palpable abdominal mass is present in less than 50% of children with intussusception. In our Study classical triad of symptoms found 23 of 60 (38.33%).[7] The onset of nonspecific abdominal symptoms in which vomiting predominates, the absence of passage of blood via the rectum (usually in cases of less than 48 hours duration), and the inability to obtain a reliable history from these nonverbal children lead to dismissal of the diagnosis of intussusception in almost 50% of cases. In some cases lethargy and convulsions predominate. The majority of pediatric intussusceptions are idiopathic without pathologic lead point.[8]

The incidence of intussusceptions caused by a PLP in an infant or child ranges from 1.5% to 12%. It increases with age from about 5% in the first year to 44% within the first 5 years of life and 60% in 5- to 14-yearolds. PLPs can be found in 4% of infants and children who has one recurrent intussusception and in up to 19% with multiple recurrences.

The most common focal cause of a PLP is an inverted Meckel diverticulum followed by intestinal polyps and duplications other less common focal PLPs that have been reported are periappendicitis, appendiceal Stump, inversion appendicectomy, appendiceal mucocele.

II. Materials And Methods

Between January 2014 to December 2016 in a tertiary level Hospital I took sixty clinically & Ultrasonologically diagnosed cases above one and below twelve years of Intussusceptions, resuscitation followed by non-operative where suitable but most of the cases operations were needed, either manual reduction or resection anastomosis.

The preoperative diagnosis of intussusceptions was made clinically and radiologically and the final diagnosis was confirmed at surgery. Only patients who were confirmed at surgery as intussusception were included in the study.

Preoperatively, all the patients recruited into the study had intravenous fluids to correct fluid and electrolyte deficits; nasogastric suction; urethral catheterization and broad-spectrum antibiotic coverage. Adequate hydration was indicated by an hourly urine output of 30 ml/hour. Relevant preoperative investigations included packed cell volume, serum electrolytes, urea and creatinine, blood grouping and cross-matching. Radiological investigations including X-ray abdomen erect and supine, X-ray chest PA-view were done in all patients. Abdominal ultrasound was also performed in some patients as it was not always readily available. Barium enema either for diagnostic or therapeutic purposes and abdominal CT scan were not performed in any of our patients due lack of these facilities and trained personnel in our centre.

III. Results

Legends of figures:

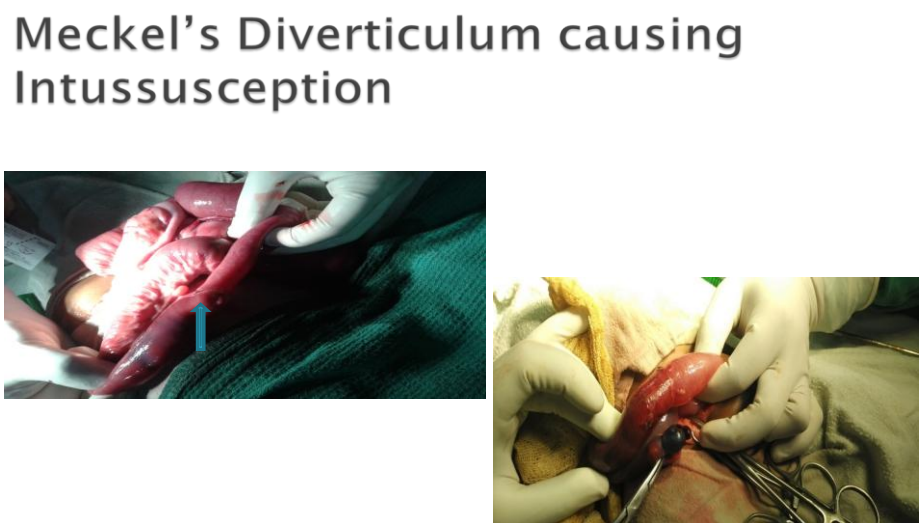

Figure 1: Intra operative fig. of Meckel's Diverticulum as PLP

Appendix causing Intussusception

Figure 2: Intraoperative Fig. of Appendix causing intussusceptions as PLP

Figure 3: Ileal Duplication cyst causing Intussusception

Among sixty cases between one to two years were 27; two to three years 18 cases; three to five years ten & five to twelve years were five only .

Although in several literature even in text book of Coran mentioned 1 to 5 years PLP was found about 44% & 5 to 12 years about 60% PLP ; In our study it was only 24.07% (13 out of 54) between 1 to 5 years of age ,40% (2 of 5) between 5 to 12 years of ages. Total fifteen cases out of fifty-nine (25.42%).

Out of total fifteen cases of different types of PLP, seven were Meckel's Diverticulum, Five were Intestinal Polyp, one Jejunal duplication cyst, one ileal Duplication cyst and one was Appendix.

One child died came in shock age was 2yrs 2 months, not able to operate inspite of Resuscitation (Death rate was 1.67%)

Male to female ratio were 2.33:1 The resection rate were very high 35.6% (21 of 59); no spontaneous reduction, 64.4% (38 of 59) were reduced manually.

Post operative recurrene rate was 1.67%

IV. Discussion

Intussusception is a common childhood problem that results in serious morbidity and mortality throughout the world and is one of the more common causes of intestinal obstruction in infancy and young children. In this review, three-quarters of patients were in the first year of life which is in agreement with other studies done elsewhere, but at variant with other reports in Nigeria that associated childhood intussusception with the above 5 years age group.[9] Also, Elebute and Adesola reported a high incidence of intussusception in children older than one year of age. This study showed that males were more affected than females with a male

to female ratio of 3.3:1 which is comparable to the results of other workers. Other authors reported female predominance. However the exact reason for this age group and gender differences is not known.[10]

In this study, more than eighty percent of the patients came from the rural areas located a considerable distance from the study area which is in keeping with other studies, this observation has an implication on accessibility to health care facilities and awareness of the disease.[11]

The etiology of intussusception in children remains a dilemma as it largely idiopathic in more than 90% of the cases. In our study, idiopathic intussusceptions was reported in 91.1% of patients and the remaining 8.9% of cases showed pathological lead points such as lymphoid hyperplasia of Peyer's patches in 3 patients and intestinal polyps and post-appendicectomy in 1 patient each, respectively.[12] The incidence of idiopathic intussusception has been reported in several studies to have a seasonal variation, with peaks coinciding with the peak incidence of viral respiratory tract infections and diarrheal diseases. In the present study, we observed a significant seasonal variation with a definite increase during the dry months (May to October), and a low incidence during rainy season (November to April). Other authors also reported similar seasonal variation.[13] Viral illness such as gastroenteritis, upper respiratory infections and other flu-like illness are known predisposing factors to idiopathic intussusception. An increase in the incidence of these diseases during dry months may be responsible for seasonal variation observed. However, an increase in the incidence of these associated diseases was not documented in our patients.[14]

The clinical presentation of intussusception in our patients is not different from those in other studies performed in developing countries. Most of the patients presented later than four days to the surgeon, a figure which is longer compared to reports from developed countries that give duration in terms of hours. Some of our patients presented early but were treated for other medical illnesses in the pediatric wards and were referred to surgeons when abdominal distention set in indicating lack of awareness of the condition among health providers in our setting and in other similar studies in resource limited setting. Most of the patients in this study were therefore picked in the late stages of disease progression when absolute intestinal had set in. The reasons for late presentation in the present study may be attributed to the fact that the diagnosis of intussusception in its initial stages is usually difficult due to vague and non-specific symptoms as a result patients remain undiagnosed for prolong periods, receiving symptomatic treatment in the pediatric wards or in the peripheral hospitals and subsequently present to surgeons late when intestinal obstruction had set in. The unequal distribution of expertise due to low doctor patient ratio in resource-limited setting renders the diagnosis of intussusceptions at the health centers and most peripheral hospitals difficult to achieve as primary health care workers in these areas may not adequately handle challenges when faced with relatively commoner differentials e.g. gastroenteritis in a daily basis. This calls for an urgent awareness campaign among doctors, nurses, and parents in our environment to raise the index of suspicion and increase the rate of early presentation in this condition. Only 42.5% of the patients reported with the classical triad of vomiting, colicky abdominal pain and red currant jelly stools. The low reporting of classical presentation has been shown by other studies from Africa. Kuremu found such symptoms in 17% of his patients. Other authors reported 33%, 32%and 7.5% among their cases. Primary health care providers have to be aware to this, as many patients may be missed in the critical time.[15]

V. Conclusion

Intussusception is very common cause of infantile intestinal obstruction mostly causes are idiopathic, mostly due to enlarged payer's patches during viral infections during seasonal changes.

But, in older children text book of Coran mentioned 1 to 5 years PLP were found about 44% & 5 to 12 years about 60% PLP.

PLP found only 15 cases aged greater than one year out of 59 , but in our study only 25.42% with PLP, 57.62% were idiopathic , so it very less than which were found in a number of other studies. So, in conclusion from our study still idiopathic cause were much higher in comparison to PLP.

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Dr.Sumitra Kumar Biswas. "A Prospective and Retrospective Study Of Intussusceptions above One Year Age Children in a Tertiary Care Hospital." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 18, no. 11, 2019, pp 45-49.