Mona maghraby

بسم اللّه الرحمن الرحيم

مركز الشبكات وتكنولوجيا المعلومات

قسم التوثيق الإلكتروني

Mona maghraby

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم باللّه العظيم أن المادة التي تم توثيقها وتسجيلها

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بعض الوثائق الأصلية تالفة
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BIA-ON

Pneumatic Reduction Versus Surgical Reduction Of Infantile Intussusception

Thesis submitted for partial fulfillment
of Master Degree in General Surgery

By

Bahgat Mahmoud Abd El-dayem
(M.B.Bch-Minia)

Supervised by

Prof. Mohamed Gamal Sayed Saleh
Professor of General & Pediatric Surgery
Minia University

Dr. Hesham M. El-Saket
Assist. Professor of Pediatric Surgery
Cairo University

Dr. M. Ashraf Wagdy
Lecturer in General Surgery
Minia University

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Introduction

Intussusception represents the most common abdominal emergency in infancy. The classical clinical triad, consisting of abdominal colics, red jelly stools and a palpable mass, is only present in approximately 50% of cases, 20% of patients are symptom free at clinical presentation. Primary imaging modality of choice is ultrasound scanning, which enables the diagnosis or exclusion of an intussusception at a sensitivity of 98-100%, specificity of 88% and a negative predictive value of 100%.

Intussusception can be managed by operative or non-operative techniques according to the case. The non-operative technique has major advantages over surgical techniques and high success rates can be achieved using pneumatic or hydrostatic reduction techniques under fluoroscopic or sonographic guidance.

Non-operative management will be attempted in cases where there is a history of less than 48 hrs; absence of general or abdominal signs of toxicity, peritonism, or peritonitis and reasonable blood electrolyte levels.

Aim of the work

Pneumatic reduction under fluoroscopic guidance will be attempted in early cases where there is a history of less than 48 hours, absence of general or abdominal signs of toxicity, peritonism, or peritonitis and reasonable blood electrolyte levels.

Surgical management will be done in cases when pneumatic reduction is contraindicated or failed or if there is signs of local (peritonitis or peritonism) or general toxicity.

History of intussusception

Intussusception as we know it today was not always consistently recognized or named. There are vague references for the disease in the middle ages when for the first time, the concept of intestinal invagination was described at autopsy **(Frush, 1995).**

As the clinical and anatomical concepts of the disease have been recognized, the terminology has been reciprocated. No fewer than 12 names have been used to describe the disorder as:- Intussusception (derived from the Latin words; Intus which mean within and sus-cipia which mean to take up, that is to say to take within). Introsusception, Intestinal Invagination, Inflammatory Invagination, Invagination of the death struggle. Volvulus incompletes. Double Intrusion, Iliac Passion, Prolapse and Miserere (which roughly translated, means "lord have mercy") **(Frush, 1995).**

In **1793, John Hunter,** was the first to accurately describe intussusception fig(1-1) as " a disease produced by the passing of one portion of the intestine into another, and it is commonly I believe from the upper passing into the lower", and he discussed a pathologic specimen from a 9 month old infant who died of an intussusception. He also advised administering emetics to produce reverse peristalsis " which will have a tendency to bring the intestine into their natural situation". **(McDermott, 1994).**

Subsequently various methods and devices were applied to achieve reduction of intussusception and treat symptoms, these included:- enemas (air or fluid), bougienage to reduce the intussusception directly, dry taxis (manual reduction through the intact

abdominal wall; also known as bloodless taxis), and manual manipulation per rectum. These methods were not successful and only the treatment by enemata has attended a considerable degrees of success. So enema reduction achieved the greatest acceptance **(Frush, 1995).**

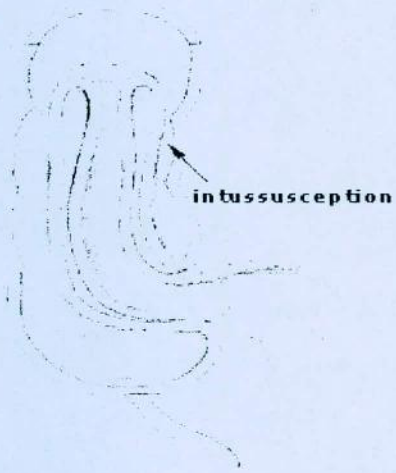

Fig.1-1: Intussusception.

Because of the older use of fluid enemas, it is in general that reports on fluid enemas are more difficult to follow and less noticeable than reports on air enema **(McDermott, 1994).**

The first account on intestinal insufflation for intussusception appeared in the medical literature during the early nineteenth century. **Blacklock,** a Scottish surgeon, described performing a post-mortem examination on a child who died of bowel obstruction in 1818, He found an intussusception and reduced it using a blow pipe. He subsequently "tried the remedy frequently, and often with the best result".

The first series on pneumatic reduction was described in **1864** by **David Greig,** a Scottish surgeon, who reported successfully reducing four of five childhood intussusception using a hand bellows. He also laid down the classic criteria for the clinical diagnosis of intussusception

"obstinate vomiting..... Obstinate constipation..... paroxysms of pain, hard tumor in the abdomen, and chiefly the passage of blood per anum" **(McDermott, 1994).**

In 1898 Dr. **Emmet Holt,** a New York physician, reported on pneumatic reduction in his book 'The disease of infancy and childhood", he called the procedure " inflation" and used an apparatus made of a simple hand bellows with an attached catheter, the abdominal wall tension was used as a guide to the amount of air introduced **(Stein, 1992).**

The first successful operative reduction of an intussusception in an infant was performed in **1871** by sir **Jonathan Hutchinson,** the patient was a 2 Years old boy with intussusception in whom attempts at reduction with warm water enema has been unsuccessful **(Swain, 1980).**

In **1913**, the first published radiograph of intussusception with contrast (using Bismuth) per rectum was obtained by **Willam ladd**. In the same year, **Lehmann** reported on the diagnosis of intussusception by roentgenology. They both believed that this technique might be used to make the diagnosis in obscure cases **(Frush, 1995).**

It was another 14 years before fluoroscopically guided hydrostatic reduction of intussusception was described by different authors from different countries, (**Pouliquen** from France, **Olssen and Pollin** from Sweden, and **Steven and Raten** from the United States in 1927) **(McDermott, 1994).**

In the 1950s, while Barium reduction was becoming popular in Europe and North America, the contemporary period for pneumatic reduction techniques was beginning with the use of pressure controlled insufflation devices and fluoroscopic screening. In **1959 Fiorito and**

Cuestas, Spanish radiologists, reported in pneumatic reduction using electronic monitoring device for pressure control and in 1961 **Dr. Ya Xiong** from China described an adjustable pressure control device for pneumatic redaction **(Miles, 1988).**

With the help of the continuous technical progress in the ultra-sound field. In **1982, Ritchard Bowerman** published the first report on the sonographic appearances of intussusception in the child and in **1983, Leonard swischuk** described the pseudo kidney sign of intussusception and recommended sonography as the initial imaging modality in cases of suspected intussusception and since that time, several large studies confirmed the accuracy of US in the diagnosis of intussusception **(Weinberger, 1992).**

Incidence & Epidemiology of intussusception

Intussusception can occur at any age even prenatal intussusception has been reported as a cause of intestinal atresia **(Young, 1998).**

The ratio of males to females is 3 : 2, the peak age is in infants 5-9 months of age; 80% of patients are under the age of 2 years **(Craig et al., 2003).**

Intussusception occurs allover the year but seasonal variations and annual fluctuation have been reported which may reflect environmental influences such as viral epidemics **(Stringer, 1992).**

El Barbari et al in his series in **1978** showed a peak incidence in Egypt in April and May months, this peak coincides with the time of the year that gastroenteritis is most common, a peak in mid winter during the time of maximal respiratory infections has also been reported.

Studies of the absolute incidence of intussusception reported an average incidence of 1–4 per 1000 live births. Higher incidences have been found in Japan and China with one center in Shanghai reporting 500 patients annually. Conversely, the intussusception rate in most pediatric clinics of North America, Australia and New Zealand is comparatively low (=0.5 per 1000 live birth per year).

Studies of intussusception from pediatric centers allover the world show that some differences in the pattern of the disease in certain countries do occur. In Nigeria there is a greater proportional of older children with ceco-colic intussusception and subacute or chronic presentation and in Southern Africa colo-colic sigmoid intussusception is peculiarly common **(Stringer, 1992).**