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CONSERVATIVE REDUCTION OF INTUSSUSCEPTION IN CHILDREN. WHY ARE WE LAGGING BEHIND?

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ABSTRACT

Childhood intussusception is a common cause of intestinal obstruction and classically the child presents with abdominal colic, vomiting, red currant jelly stool and general irritability. These signs and symptoms generally permit the diagnosis of an intussusception to be made. However, a hydrostatic radiological/fluoroscopic study is confirmatory in doubtful cases. Childhood intussusception is a strangulating obstruction and therefore warrants immediate attention for reduction of the intussusception. Recent advances in endoscopic surgery have shown that the previous held belief of time lapse from onset of illness to presentation should not be used as a criterion for not adopting conservative (hydrostatic or pneumatic) methods in reducing the intussusception in a child. The factors to consider are the clinical state of the child and the presence or absence of abdominal catastrophe. Conservative reduction lowers morbidity and mortality, shortens hospital stay, allows the parents early return to work and is cost effective.

KEYWORDS: Non-operative, reduction, intussusception, Children.

INTRODUCTION

Paediataric intussusception is a common cause of acute abdominal condition and is one of the major causes of intestinal obstruction in children. It is the invagination of the intestine into that part adjacent to it and occur frequently between the ages of three and nine months and commonly around the ileocaecal region. In its aetiology so many theories have been propagated, all of which has some merit, as aetiological factors (Nixon, 1978). Accumulated clinical experiences and medical advance have completely revolutionalized the management of this condition, whereby conservative options are now advocated in place of orthodox surgical reduction, as the optimum method of treatment. Embracing modern methods of treatment will reduce mortality and morbidity, shorten hospital stay, enable early return of the child to school and is cost effective.

CLINICAL PRESENTATION AND DIAGNOSIS

The classical story is that of a severe intermittent colic arising unexpectedly in a healthy and often obesed infant. Vomitting and passage of the notorious red currant jelly stool later follows. The child generally becomes irriatable and palpaple abdominal mass may be obvious in a majority of cases. Boys are reported (Stringer, et. al. 1992) to be affected more than girls in the ratio of about 2:1. This symptom complex however is enough to arouse a high index of suspicion in the diagnosis of intussusception, meaning that complex diagnostic and technological advanced tools are not necessary. These signs are therefore sufficient in themselves to alert the physician (Winstanley, et al. 1977). In cases of uncertainty, diagnostic barium enama under fluoroscopy is indicated and is almost 100% confirmatory.

TREATMENT OPTIONS

The basic point to realize is that this is a strangulating obstruction not a simple obstruction. It is correspondingly much more urgent because although suction and intravenous fluid therapy can alleviate and improve the situation in the presence of simple obstruction, over a comparatively long period yet there is no way of preventing the progress of the strangulating bowel of intussusception from its course, towards gangrene other than by reduction of the intussusception. There is therefore no place whatsoever for inactive observation of any child in whom intussusception has been entertained as diagnosis. Diagnostic barium enema is also therapeutic in majority of cases, the intussusception if not fully reduced howbelt partially reduces making the operation later much easier. Previous teaching advocated (Winstanley, et al. 1977) a time lapse of not more than 24 hours from onset of illness in attempting conservative reduction. However recent advances in endoscopic surgery (Miller, 1992 and Ravitch & Mecuni, 1950) have shown that it is not the time lapse period but the patient's clinical condition that dictates the need for conservative or operational reduction. In that series, patients presented beyond

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the 24 hours time lapse from the onset of the illness yet the bowel loops were still viable. It may perhaps be said that the cardinal point in assessing acute abdominal catastrophe in a child is not the question of time lapse but the clinical presence of such abdominal signs suggestive of acute abdominal catastrophe.

Hydrostatic reduction first advocated by Hirschsprung but practicalized by Ravitch (Guo, et al. 1986) is a convenient diagnostic/therapeutic maneuver not requiring too much of a skill. However, the cooperation of the radiologist and the surgeon interplays to make this procedure a useful diagnostic/therapeutic tool. In cases of suspected perforation water soluble contrast media may replace barium. Pneumatic reduction is commonly used in a wide section of China and reports (Jinzhe, et. al. 1986 and Bassey, 1996) from there show the affinity of the radiologist/surgeon to pneumatic reduction in preference to hydrostatic reduction.

Hydrostatic or pneumatic reduction even if not fully reducing the intussusception is claimed to make the operation later easier, by partially reducing the intussusception. Perhaps this is what is applicable in some regions with habitual enema administration (Archibong, 1996). This is considered a prerequisite before attendance at hospital especially if abdominal discomfort of any sort is suspected. Mothers frequently practice this and in babies the enema solution is pumped into the rectum the gluteal muscles are squeezed together to force the solution inwards and upwards (Archibong, 1996). May be in some cases the obstruction reduces spontaneously if the pressure exerted by the injected enema is high enough to push back the 'mass'. However, if the pressure is not high enough, the intussusception may reduce somewhat hence the obstruction may not be so "dangerous" even if presentation at hospital is done much later. In cases of intussusception caused by large polyps or tumour hydrostatic or pneumatic reductionmay not be effective, requiring that operation be carried out to reduce the intussusception.

CONCLUSION

Since operative reduction involves only manual reduction of the "mass" it is then logical that non-operative reduction should precede this which may be hydrostatic or pneumatic. The earlier doctrine of time lapse from onset of illness had been discarded in advanced countries and so needs serious rethinking in the developing countries with the present advances in medical sciences and therefore should not be used as a criterion for choosing between operative and non-operative reduction. The clinical state and evaluation of the abdominal signs in a child are the important features to consider. It behooves on the clinicians in the developing countries to seriously consider the use of non-operative procedures as a treatment option in paediatric intussusception. The dearth of qualified personnel in the radiological unit coupled with the lack of enthusiasm in radiological reduction has shifted all the work to the surgeons. Lack of equipment is also a major handicap as most hospitals do not have functional radiology unit. Conservative reduction reduces mortality and morbidity, shortens hospital stay and enables the parents to return to work and it is cost effective. This therefore makes the adoption of conservative methods of reduction a necessity for regions in the developing world.

Table: 1:

Signs/symptoms in children intussusception (in decreasing frequency)
Abdominal colic/pain
Vomiting
General irritability
Bleeding per rectum (Red currant jelly)
Palpable mass per abdomen
Diarhoea
Constipation
Prolapsing mass per rectum

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