INTUSSUSCEPTION
THESIS

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BY

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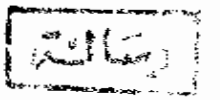

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C O N T E N T S

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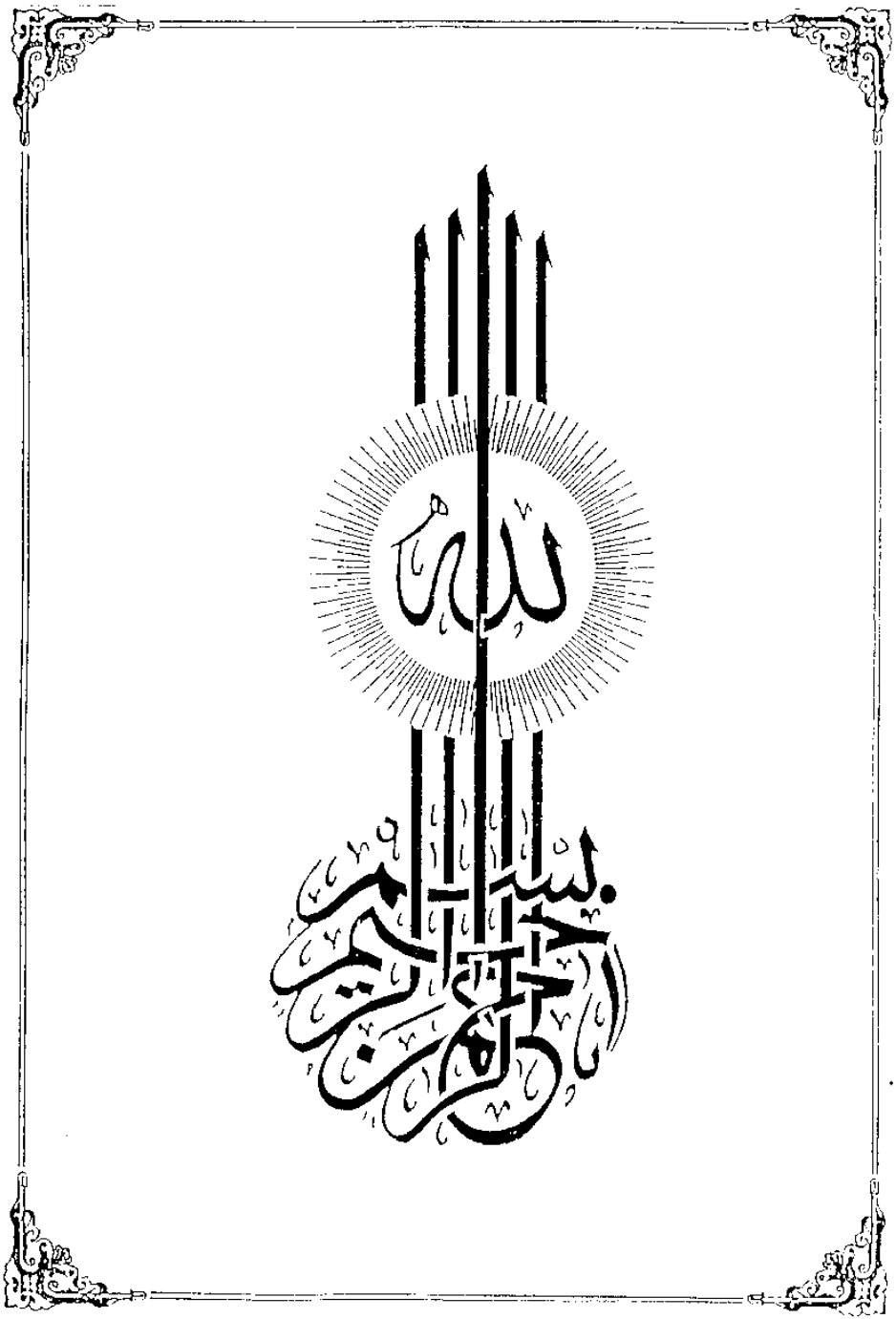

INTRODUCTION

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Intussusception is the invagination of one part of the intestine into itself. It was first described by Barbette in 1692. Hunter demonstrated the pathologic specimen from a 9-month old infant who died of an intussusception in 1789. The first successful operative reduction of an intussusception in an infant was carried out by Hutchinson in 1871. Hirschsprung introduced a plan of controlled hydrostatic pressure reduction of intussusception in 1876.

Rafinesque (1878) divided intussusception into 4 types: hyperacute, acute, subacute and chronic.

Chronic intussusception in children is less common, poorly recognized and rarely described (El-Barbari et al,1978).

In the adult, intussusception is comparatively rare, accounting for about 5 percent of all obstructions.

Diagnosis of intussusception is sometimes missed, only the frankly evident cases are easily diagnosed and even in these the diagnosis may be delayed. Early diagnosis and treatment offer the best chance of cure.

In the present article a retrospective study of intussusception at El-Demerdash University Hospital will be reviewed during the last year (1984).

REVIEW OF LITERATURE

1. Aetiology
2. Pathology
3. Types
4. Clinical picture
5. Diagnosis and differential diagnosis
6. Treatment

AETIOLOGY OF INTUSSUSCEPTION

The aetiology of intussusception remains obscure in the vast majority of instances. Eighty five percent of the idiopathic variety are in infancy and childhood, while in adults, the great majority of cases has some causation (Benson et al, 1963).

Intussusception in Infancy and Childhood :

Inspite of the fact that, intussusception presents a remarkably clear cut surgical entity, the aetiology in infancy and childhood is not completely understood (El-Barabari et al, 1978). In approximately 5 percent of intussusception in infancy and childhood, an identifiable leading point has been documented (Spitz, 1985). This may consist of Meckel's diverticulum, polyp, ectopic pancreatic nodule or submucosal haemorrhage of Henoch-Schonlein purpura. However , in most cases no leading point can be identified (Spitz, 1985).

Hypertrophy of the lymphatic tissue in the terminal ileum reactive to some disease of infancy and childhood is a major causative factor (Freund et al, 1977).

In all patients undergoing operative intervention for intussusception, marked lymphadenopathy and hypertrophy of Pyer's patches in the distal ileum were found (Spitz, 1985).

Perrin and Lindsay (1921) believed that, the ileocaecal and enteric intussusceptions are caused by an inflammatory swelling of the prominent lymphoid tissue which forms a ring around the ileocecal valve and projects into the caecum. In a series of 300 cases of intussusception in infancy and childhood, the combination of the hyperplasia and hypertrophy of Pyer's patches in the terminal ileum seemed to have contributed to the presence of the intussusception (Benson et al, 1983).

Occasionally Meckel's diverticulum may be the leading point (Ponka, 1956). El-Barbari et al, (1978), in a series of 180 cases of intussusception in infancy and childhood, in Egypt, Meckel's diverticulum was a demonstrable local lesion. It was present in eight cases (Table 1). In another study, it was also present in seven cases in a series of 209 cases of intussusception in infancy and childhood (Hutchison et al, 1980) and in one case in a series of 223 cases of intussusception in infancy and childhood (Mayell, 1977) (Table 2).

Henoch-Schonlein purpura is contributed to be an aetiological factor of intussusception (Spitz, 1985). It was reported in two patients in a series of 209 cases of intussusception in infancy and childhood (Hutchison et al, 1980). The oldest child in this series had lymposarcoma.

Table (1) : The aetiopathology in 180 cases of intussusception infancy and childhood in Egypt(El-Barbari et al, 1978).

Aetiology	No. of cases
I . Idiopathic	167
II. Causative factor	
Meckel's diverticulum	8
Lymphosarcoma, ileum	1
Reticulumcell Sarcoma,caecum	1
Lymphoid hyperplasia, base of appendix and caecum.	1
Mucous cyst, ileum	1
Complications of worms	1
Total	180

Lymphosarcoma should thus be suspected in a child of six years or more in age presenting with intussusception (Hutchison et al, 1980).

Mayell (1972), in a series of 223 cases of intussusception in infancy and childhood, found that a localized leading point was present in 17 cases (7.6 percent). The remaining 206 cases (92.4 percent.) have been termed idiophatic in the absence of any obvious local lesion (Table 2).

El-Barbari et al, (1978), in a series of 180 cases of intussusception in infancy and childhood in Egypt found that, 167 patients (93 percnet) had no demonstrable lesion. However, gastroentritis and respiratory tract infections preceding the onset if intussusception were noted in 30 percent and 20 percent respectively.

Abnormal appendicaecal peristalsis secondary to local irritants such as worms, faecoliths, foreign bodies, polyps, hypertrophic lymphoid follicles, mucoceles, endometrial implants and post inflammatory scars have been implicated in the

Table (2) : The aetiopathology in 223 cases of intussusception in infancy and childhood (Mayell, 1972).

Aetiology	No. of cases
I. Idiopathic	206
II. Specific Local Pathology :	
Polyp	8
Bolus of ascaris	8
Lymphoid hyperplasia	2
Partial non-rotation of bowel	1
Meckel's diverticulum	1
Total	223

production of appendicaecal intussusception (Schmidt and Mc Carthy, 1971).

A faetal type of caecum with the appendix originating from its tip has also been suggested as an aetiological factor in the production of intussusception in infancy and childhood particularly if the proximal lumen of the appendix has a much greater diameter than the distal lumen (Atkinson et al,1976 and Fraser, 1943).

Individual cases of intussusception complicating the treatment of malignancy with cytotoxic drugs have been reported. The changes in the intestinal motility produced by these cytotoxic drugs can be a possible causal factor (Dudgeon and Hay, 1972).

A trichobezoar has been also reported as a rare cause of ileo-ileal intussusception (Rees, 1984).

Intussusception in Adults :

In the adult, intussusception is comparatively rare accounting for about 5 percent. of all obstructions and in the great majority of instances has some obvious causation. This is usually a tumour forming the apex of the intussusception which tends to be a benign lesion in cases of small bowel intussusception and a malignant tumour in cases of intussusception of the colon. Among the benign tumours, submucous lipoma,

most frquently found in the caecum and ascending colon. Leiomyoma and Leiomyosarcoma may be responsible, as well as the more common adenomas and adenocarcinomas of the bowel (Ellis, 1985). Donhauser and Kelly (1950), in a series of 16 cases of adult intussusception found a causative Lesion in 76 percent of cases while Weilbaecher et al. (1971), in a series of 160 cases of adult intussusception found a causative Lesion in 90 percent of patients.

Hadley and Simpson (1983), in a series of 32 cases of adult intussusception found that lymphosarcoma affecting small bowel and caecal cancer were the only malignant disease encountered(6.25 percent).Benign neoplasms(submucosal lipoma, solitary hamartoma) were found in 2 cases (6.25 percent.). Seven intussusceptions were associated with benign inflammatory polypi (21.75 percent). The remaining intussusceptions showed inflammatory changes only and were classified as primary (65.5 percent).

Murdoch and Wallace (1977) stated that, malignant tumours frequently cause intussusception especially in the large bowel group. In a series of 16 cases of adult intussusception, Lesions were found in 5 large bowel intussusceptions and all were malignant, while the 4 Lesions found in the small bowel group were benign (Table 3).

Table (3) : The histopathology in 9 cases of adult intussusception (modified from Murdoch and Wallace,1977).

Histopathology	No.of cases
Small bowel	
Pedunculated lipoma	1
Meckel's diverticulum	1
Polypoid papilloma	1
Granulomz of ileum	1
Large bowel	
Adenocarcinoma	4
Lymphosarcoma	1
Total	9

The abundance of lymphoid tissue in the intestine in infancy has shown particular attention. Submucosal masses of lymphoid tissue undergo inflammatory hyperplasia during either enteric or parenteral infections, and hyperplastic lymphoid tissue can form a tumour like plaque or even a circumferential cuff of tissue which may lead to intussusception (Kissane, 1975).

Interest has recently been aroused by the demonstration of viruses, either in the mesenteric lymph nodes or in the intestinal contents in patients with intussusception. These patients have been shown to have low or absent levels of circulating antibodies against strains of viruses isolated from the intestinal contents, and to develop such antibodies during convalescence after relief of the intussusception. At present, enteric viral infection with resulting hypermotility must be regarded as the most attractive hypothesis as regarding the pathogenesis of intussusception in infancy. The occurrence of intssusception in patients with Henoch-Schonlein purpura deserves special mention. These cases constitute only about 2 percent. of all intussusceptions in childhood (Kissane, 1975).

Practically all intussusceptions occur in the forward direction. However, retrograde intussusception can occur but it is extremely rare and a case of retrograde gastro-oesophageal intussusception was reported in which the antrum of the stomach was invaginated into the midoesophagus (Cohen, 1949).