

## INTUSSUSCEPTION IN ADULT

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Intussusception is one of the infrequent etiologic factors which must be considered in those patients seen with an intestinal obstruction without other apparent cause. The frequency with which it may occur diminishes with the increasing age of the patient to adult life. Most of the cases of this condition are, of course, seen in the infant. In our experience it is very uncommon in the adult; we have seen but two cases in the last 4000 gastro-intestinal examinations. However, this is not a true criterion of the frequency, since both of these occurrences were fairly longstanding and there is little doubt that chronic cases occur less frequently than do the acute manifestations.

This condition must not only be considered as a cause of intestinal obstruction but must also receive careful consideration in the differential diagnosis of certain cases of suspected neoplasm. The following case illustrates very well the importance of considering intussusception, not only from the point of intestinal obstruction but also to be differentiated from a neoplasm.

### CASE STUDY

*The patient, a 59 year old man, had always been in good health until four months ago when he began to notice epigastric distress after meals. Gradually there developed cramp-like, colicky pains in the abdomen and he noted a hard lump in the right lower quadrant. He was unable to eat because to do so aggravated the cramps. At the same time he became constipated, which increased in severity so that it became necessary to take castor oil for relief of the abdominal cramps. Blood was noticed in the stool on two occasions, but there was no history of tarry stools. At no time was there any nausea or vomiting. He consulted a physician for the first time six weeks ago and was told that the symptoms were due to a rupture. A herniorrhaphy was then done but the symptoms were not relieved. Weakness and weight loss have been quite marked; the patient has lost 37 pounds since the onset of the present illness. For the past six days there have been three to four soft, semi-liquid yellow stools daily. The patient is now eating small quantities of food but the cramp-like pains persist.*

*Family history is relatively unimportant except that a sister died of carcinoma of the breast. The patient is married and has six children living and in good health.*

*The past history is essentially negative except for the hernia operation six weeks ago. There have been no other operations or serious illnesses.*

*The physical examination shows little of importance except for the*

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*abdominal findings. In the abdomen there was a hard, nodular mass in the upper right quadrant which was both visible and palpable. This mass was about the size of an orange and was thought to be in the location of the ascending colon. The liver edge was palpable two fingers breadth below the costal margin. The spleen was not palpable.*

*The initial impression of carcinoma of the ascending colon was based upon the orange-sized mass, the change in bowel habits, increasing constipation, a rather short history and marked weight loss. It was thought, however, that the mass was unusually large for a carcinoma of that duration, and, although exploration was indicated, further studies should be made.*

*Laboratory: The urine was normal at all times. The blood studies showed 3,810,000 red blood cells and a hemoglobin reading of 75 per cent, the white blood count was 11,700, of which 89 per cent were polymorphonuclear neutrophilic cells and 11 per cent were lymphocytes. The blood Wassermann and Kahn reactions were both negative. The blood chemistry findings included urea 36 and blood sugar 122 five hours postprandial. Routine isoagglutination tests were made and the blood was found to be in group four.*

*Roentgen examination: The chest was entirely normal. Routine film of the abdomen and urinary tract was reported as follows: "the lumbosacral region shows an osteoarthritis, otherwise normal. There are no suspicious urinary tract shadows, both kidneys are normal in size, shape, and position. There is no evidence in this examination of any localizing intestinal obstruction."*

*The roentgen examination of the gastro-intestinal tract was limited to the colon by means of the barium enema. The report on this examination was "large obstructing filling defect in the region of the hepatic flexure with involvement of the ascending and the proximal transverse colon. The double contrast method of examination was used following evacuation of the enema but neither barium nor air could be passed beyond the point of obstruction."*

*Operation: An exploratory laparotomy was done by Dr. George Crile, Jr. When the peritoneum was opened, a large mass was seen in the ascending colon just below the hepatic flexure which seemed to involve the cecum and terminal ileum. This was the size of a coconut and was soft and compressible. There were no palpable glands nor were there any palpable masses or nodules in the liver. Resection was decided to be the procedure of choice and the mass was removed without attempting to reduce the intussusception. The distal ileum was anastomosed with the transverse colon and a Witzel type of ileostomy was performed six inches proximal to the ileocolostomy. The ileostomy tube was removed in five days and convalescence was uneventful.*

*Pathologic report: The specimen consisted of the distal end of the ileum, cecum, appendix, and ascending colon. There was an intussusception at the ileocecal valve with about four inches of ileum extending into the invaginated cecum and ascending colon, the head of the intussusception being formed by the ileocecal valve which had an ample lumen allowing the free passage of fluid. There was marked thickening and edema of the walls of the bowel and obliteration of the lumen of the appendix. In the head of the cecum and completely surrounding the appendiceal orifice was a tumor mass about 3.5 cm. in diameter and having a slightly elevated border and a very irregular central ulcer. There were also several large, irregular ulcers in the cecum and ascending colon.*

*Microscopic examination of the cecum showed marked thickening of the wall, marked edema, a mild inflammatory reaction and an adenocarcinomatous growth limited to the mucosa. The final pathological report was adenocarcinoma of cecum, intussusception of cecum and ascending colon, fibrosis of the appendix and ulcerations of the cecum.*

The interesting features of this case are the chronicity of the disease and the importance of differentiating the lesion from a large neoplasm. It may be seen from features of this case that, from a purely clinical point of view, the correct diagnosis of intussusception is not always easy to arrive at.

The usual case of intussusception is one with a rather short history, usually a few days or less, and with a sudden onset. The patient will have severe cramp-like pains and presents the picture of an abdominal emergency with temporary collapse and vomiting. The intestinal obstruction is usually not complete and the patient may have watery stools with visible blood or simply pass blood and mucus. Symptoms later in the course of the disease are distention, visible peristalsis, and even vomiting of intestinal material.

A comparison, then, between the usual case and the present one shows many contrasting and confusing features. The more or less gradual onset four months ago with epigastric distress certainly is not the characteristic history of an intussusception. Cramp-like pains, one of the constant findings, were present in this case but they were not especially severe. The increasing constipation becoming so marked as to require castor oil for evacuation is an important point in the history, as any change in bowel habits is always suggestive of intestinal neoplasm. In this case, however, it was due to the mechanics of the lesion and not to the small carcinoma. A mass was noted by the patient after a period of time and this had been interpreted as a hernia and operation performed without perceptible relief. Vomiting had never been present.

Intestinal carcinoma could be a justifiable clinical diagnosis in this case since many of the so-called characteristic findings of neoplastic

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disease are present. In the first place the age is one period in which cancer is to be found with relative frequency. The history which the patient gives is a rather short one with a gradual onset and severity of the symptoms. Weakness and weight loss had been quite marked due, however, in the light of subsequent findings, to his inability to eat much food without pain rather than to the carcinoma. A mass was present as would be expected in a large neoplasm and this, too, showed a gradual increase in size during the course of the present illness. It is true, of course, that an adenocarcinoma was present but did not account, at least directly, for the symptoms and findings. Indirectly, the tumor may be considered a factor in the case as it may have played an important part in the formation of the actual intussusception.

The etiology of intussusception in the adult has not been entirely determined. It has been thought that tumors in the region are an important factor, since the effort on the part of the intestine to rid itself of the foreign body results in unusual peristaltic activity. The polypoid or sessile tumors would be more apt to be a contributing cause as they will be propelled into the adjoining segment of intestine and carry the bowel wall with them. Many of the reported cases of intussusception of the terminal ileum into the cecum show the presence of a lymphosarcoma of the ileum. This type of tumor was also present in the other recently examined and operated case of intussusception. In the absence of a tumor, it has been thought that a large bolus of food, or other foreign body or a relaxed bowel might be one of the contributing causes.

The diagnosis in those cases that may receive proper roentgen examination should be made with a considerable degree of accuracy. The colon examination is, of course, the method of choice, using both fluoroscopic and radiographic visualization. The most obvious finding will be the intestinal obstruction which is generally quite marked.

The appearance of the bowel at the site of the intussusception may show one of several rather characteristic pictures which, with the presence of the mass, the diagnosis may be based upon. The most typical of these will be the spiral effect as shown in figure 1 which was present in the case being presented. It will be noted in this film that the striations produced by the mucosa of the outer wall of the sheath are very clearly seen. The barium was able to pass into the space between the two intestinal walls, thus giving the most typical appearance of an intussusception. Unfortunately, however, this space cannot always be filled with the opaque enema, particularly if considerable edema is present from circulatory disturbance. In other cases, the presenting feature will be a collection of gas which remains within the barium filled bowel at the obstructed point and which is retained within the inner walls. Another often described appearance is the "cupolo" or the "pincer" effect at the distal end of the lesion. These configurations are produced by the incomplete penetra-



FIGURE 1: A characteristic appearance of an intussusception of the cecum and ascending colon. Spiral effect is produced by the presence of barium between the enclosing sheath and represents the mucosal markings of the outer bowel wall.

tion of the barium into the sheath between the two intestinal walls and will vary considerably, depending upon the amount of barium which passes into that space.

In the more acute cases it may not be possible to do a satisfactory roentgen examination with contrast media. In these, however, a plain film of the abdomen may be of considerable aid if there is sufficient gas in the intestines to show the site of the obstruction and the portions of the bowel that are dilated above the lesion.

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The treatment is, in the majority of the cases, a surgical problem. In the exceptional case the intussusception will be reduced by the enema so that this procedure may at the same time serve as both a diagnostic and a therapeutic procedure.

### SUMMARY

This interesting case of intussusception has been presented to illustrate the importance of its consideration, even in what might be thought to be advanced neoplastic disease.

The roentgen examination, when the condition of the patient permits it, is the greatest single aid in making the diagnosis. Various roentgen characteristics are mentioned.