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Sigmoid Volvulus in Acromegalic Patient; Successful Surgical Management of Sigmoid Volvulus and Pituitary Macroadenoma: A Case Report

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Abstract:

Sigmoid volvulus in acromegalic patients is very rare. Here we report a case of sigmoid volvulus in an acromegalic patient who refused surgical treatment for pituitary macroadenoma after initial diagnosis five years back. Sigmoid volvulus was managed successfully by emergency laparotomy and sigmoid colectomy followed by primary end to end anastomosis. Six weeks later she underwent endonasal transsphenoidal removal of pituitary tumor. Postoperatively she improved gradaully and Post operative MRI of brain showed no residual tumor but still her serum GH level is high even after 12 months. So we advised her for radiotherapy. She is scheduled for regular follow up with clinical and investigational assessments.

***Key words**: Sigmoid volvulus, acromegaly, pituitary macroadenoma*

Introduction:

Sigmoid volvulus is an abdominal emergency that results from twisting of sigmoid colon at its mesenteric attachment and needs emergency surgical intervention. An abnormally long and redundant sigmoid colon with narrow based sigmoid mesocolon is a recognized predisposition to colonic volvulus.[1,2] In longstanding growth hormone secreting pituitary adenoma can result a long sigmoid colon and sigmoid mesocolon which can lead to sigmoid volvulus.[3,4] Here we describe such a rare case of sigmoid volvulus in acromegalic patient that was successfully managed by emergency abdominal surgery followed by transsphenoidal pituitary surgery.

Case report:

A 40 years old woman presented with features of acromegaly (i.e. enlargement of hands, feet, jaw, excessive sweating, weakness, facial changes etc.) (Fig.-1) 05 years back. She had no visual disturbance or headache. She was non diabetic and her blood pressure was with in normal limit. She was missing her menstrual cycle for last 3 years. MRI of brain showed pituitary macro adenoma of 1.5x2.5x3cm with supraseller extension. Pituitary hormonal essay showed serum Growth Hormone (GH) level was >40 ng/ml and ACTH, TSH, FSH, LH and Prolactine level was normal. Her random blood sugar (RBS) was in normal range. At that time she was advised for transsphenoidal pituitary surgery. But patient and patient party refused surgical treatment and left hospital. Five years later she presented in surgery department with abdominal pain, distension, constipation and respiratory distress. Plain X-ray abdomen erect posture including both dome of diaphragm showed features of large gut obstruction (Fig.-2). After initial resuscitation, emergency laparotomy with midline incision revealed sigmoid volvulus. Gut condition was good (i.e. no signs of strangulation). Following sigmoid colectomy, intestinal decompression, 'on table colonic lavage' and a search for any growth in gut wall primary end to end anastomosis was done along with digital anal dilatation. The resected sigmoid loop showed thinning

Fig.-1: *Picture of patient showing features of acromegaly*

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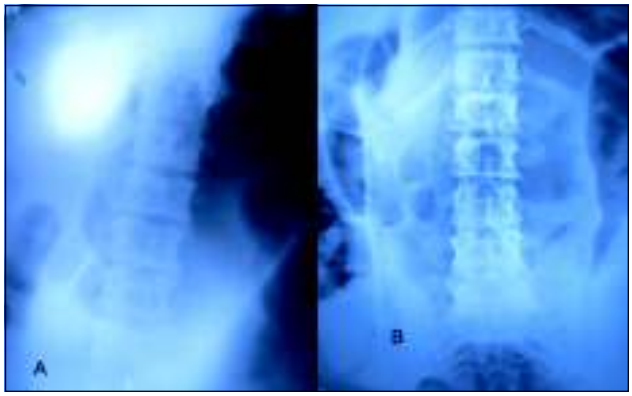

Fig.-2 (A&B): *Pplain x-ray abdomen showing features of large gut obstruction*

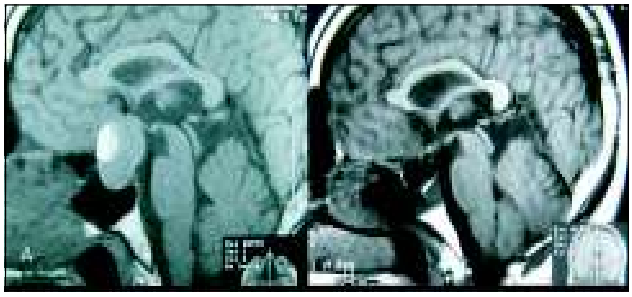

Fig.-3: *A - Preoperative MRI of brain showing pituitary macroadenoma. B - Postoperative MRI of brain showing complete removal of pituitary tumor*

and distension, but no metaplastic polyp, carcinoma or ulceration on macroscopic examination after open the gut lumen. Postoperatively she recovered well and uneventfully.

Five weeks after abdominal operation, MRI of brain was repeated and tumor was found as same size of that of previous MRI (Figure3A). Six weeks later she was re-operated for pituitary tumor through transnasal endoscopic transsphenoidal approach. During tumor removal attention was given to remove the tumor radically. After the endonasal transsphenoidal pituitary surgery she recovered uneventfully (without any complication like CSF rhinorrhea, diabetes insipidus (DI), electrolytes imbalance etc). Post operatively she is doing well for last 12 months with gradual improvement of acromegalic features but she is still amenorrhic and her serum GH level is high (i.e. >20 ng/ml). Post operative MRI of brain (03 and 12 months after operation) showed no residual tumor in sella or suprasellar region (Figure3B). At the end of seven months of abdominal operation colonscopy was done and no abnormality was detected. As GH level is still high at the end of 12 months (at last follow up) we advised her for radiotherapy. She is scheduled for regular follow up with clinical and investigational assessment. Follow up investigations includes hormonal essay, MRI of brain and colonoscopy.

Discussion:

There can be a lot of systemic complications in long standing acromegalic patients.[5,6,7,8,9,10] Complications in cardiovascular system include systemic hypertension, cardiomegaly, heart failure, arrythmias, atherosclerosis etc.[5,6,8] Sleep apnoea syndrome and respiratory failure can occur in acromegaly.[5,6] Reproductive failure, diabetes mellitus is common in GH excess.[5] Neoplastic disorder can occur in thyroid, breast, lung, endometrium, pancrease, stomach and colon. Common GIT complications include peptic ulcer disease, gastric carcinoma, colonic dysplasia, colonic polyp and carcinoma.[4,5,6,7,9,10] Intestinal obstruction is very rare and may be associated with colonic malignancy in chronic form. Sigmoid volvulus is very rare in acromegalic patient but it can occur in long standing cases probably GH stimulation causes increasing in length of sigmoid colon and mesocolon It is to mention that in acromegaly whole length of colon and mesentery are increased.[4] In the literature only a very few cases were described. In 1987 J.P. McFadden and R.J.M. Corrall reported a case of sigmoid volvulus in acromegalic patient who underwent emergency surgery but expired post operatively from myocardial infarction and respiratory failure. They wrote that their patient was predisposed to colonic volvulus by the length and redundancy of his sigmoid colon, caused by his underlying long standing acromegaly.[3] Klein and colleagues examined the colon of 17 acromegalic patients in detail by means of barium enema and colonoscopy. Polyps were identified in nine patients and were removed and examined in eight: in five patients they were adenomatous, and in four of the five they were multiple.[3,10] Compared with controls, the risk of developing adenomatous polyps in acromegaly is usually enhanced, anticipated, more frequently synchronous, and of larger size.[5]

Conclusion:

In our case we assumed that long standing GH stimulation predisposed sigmoid volvulus, which would not happen if pituitary tumor had been removed earlier and GH level reduced to normal level. But cure GH access is very difficult. On an average only 50-80% patient is cured by complete pituitary tumor removal. Remaining 50-20% fails to drop GH level to normal level even post operative MRI shows no residual tumor.[6,11,12] Only 30% patient with pituitary macroadenoma shows hormonal cure.[6] Here in our case even after 12 months GH level is high so we advised her for radiotherapy. It is notable that in this case the pituitary tumor and it's site & size related features remained static for a long period but excessive GH produced abdominal life threatening emergency.

Conflict of Interest : None

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