The Turkish Journal of Pediatrics
1972 / Vol. 14 / No. 1 / pp. 35 - 39

An Unusual Case of Gastric Carcinoid with Metastases

Faruk Memik, M.D. / Nafiz Yeşilleten, M.D.*** / Aysen Yeşilleten, M.D.******

Carcinoid or argentaffin tumor was first described by Nicholas Kulschitzky in 1897. He then thought the origin of the tumor cells to be specialized epithelial cells. In 1905 Schmidt noticed the similarity of the tumor cells to the cells of adrenal medulla because of their yellow color and concluded that they were Chromaffin cells. The term Carcinoid was first used by Oberndorfer in 1907, meaning that the tumor was malignant in appearence but not in its clinical course.[1]

According to Raiford, carcinoid tumors arise from the normal argentaffin cells which are found throughout the gastrointestinal tract.[2] Some authorities claim that carcinoid tumors emerge after these cells undergo an intermediary neuromata stage. Though a carcinoid tumor may be seen in any region of the gastrointestinal tract from the stomach to the rectum, the majority of these tumors are found in the terminal ileum and in the appendix. In Mac Donald's series of 356 cases, 58 % were of the appendix and 42 % were extraappendiceal in origin. The 149 extraappendiceal carcinoid tumors were as follows: stomach 14, duedonum 8, jejunum 17, ileum 74, cecum 5, colon 6, sigmoid 2, rectum 13, gallbladder I, meckel's diverticulum 2, and uncertian 7.[3]

The tumor as well as its metastases is capable of liberating serotonin (5-Hydroxytryptamine) which has a stimulating effect on various smooth muscle systems and which produces the well known carcinoid syndrome.[4] It is generally accepted that the tumor without metastases does not cause the carcinoid syndrome but if it has liver metastases, the typical syndrome appears in most of the cases.[4-7]

* From the Internal Medicine and Pathology Departments of Atatürk University Medical Faculty, Erzurum, Turkey.
** Associate Professor in Department of Internal Medicine.
*** Instructor in Internal Medicine.
**** Instructor in Department of Pathology.

Case Report

A 14-year-old male was admitted to the hospital in December 1968 with the chief complaint of epigastric pain of seven months duration. The pain had no radiation and increased after food intake. Twenty days prior to admission the patient had an episode of diarrhea which lasted three days and subsided without treatment. He had always enjoyed good health until the development of epigastric pain. His parents stated that he had lost 3 kilograms since the beginning of the epigastric pain. On physical examination the patient was a thin, pale, well developed male in no apparent distress. The temperature was 98°F and the pulse and the respiration were 100 and 24 per minute respectively, the blood pressure was 95/60 mm.Hg. A grade 2 systolic murmur was heard over the mitral region. The liver was enlarged and palpable 4 centimeters below the right costal margin. On the surface of the left lobe of the liver there were painful, small multiple nodules. The spleen was palpable 2 centimeters below the left costal margin. The hemoglobin was 3.8 gm. per 100. and the leucocyte count 8300 with normal differential. Anemia was hypochromic, normocytic. Bone marrow showed no abnormality. Erythrocyte sedimentation rate was 10 mm. the first hour; 15 mm. in the second hour. Other laboratory values were as follows: NPN, 11 gm. per 100 ml.; Total proteins, 6.75 gm. per 100 ml.; albumin, 3.75 mg.; globulin 3.0 gm.; SGOT, 25 U.; SGPT, 12 U.; alkaline phosphatase, 3.8 BU.; the serum bilirubin was normal. There was no blood in either the faces or the gastric aspirate. The gastric analysis revealed no free acid. Cytologic examination showed no tumor cells in the gastric aspirate. Upper GI series revealed round filling defects measuring 2-3 centimeters in diameter in the greater curvature of the stomach (Figures 1 and 2).

Chest X-ray, IVP, barium enema and small bowel series were all within normal limits.

Clinical diagnosis was lymphosarcoma of the stomach and the patient underwent laparatomy.

At operation, multiple tumor masses involving the stomach, liver and mesenteric nodes were found. The entire peritoneum appeared to be involved with small nodules. Multiple biopsies were taken from the involved organs and mesenteric nodes. The peritoneum was closed in the usual manner.

Histopathological examination revealed the tumor to be carcinoid (Figure 3). This was verified by special silver nitrate staining of the specimens. All the biopsy specimens taken uniformly revealed the charecteristic appearence of carcinoid tumor.

Figure 1

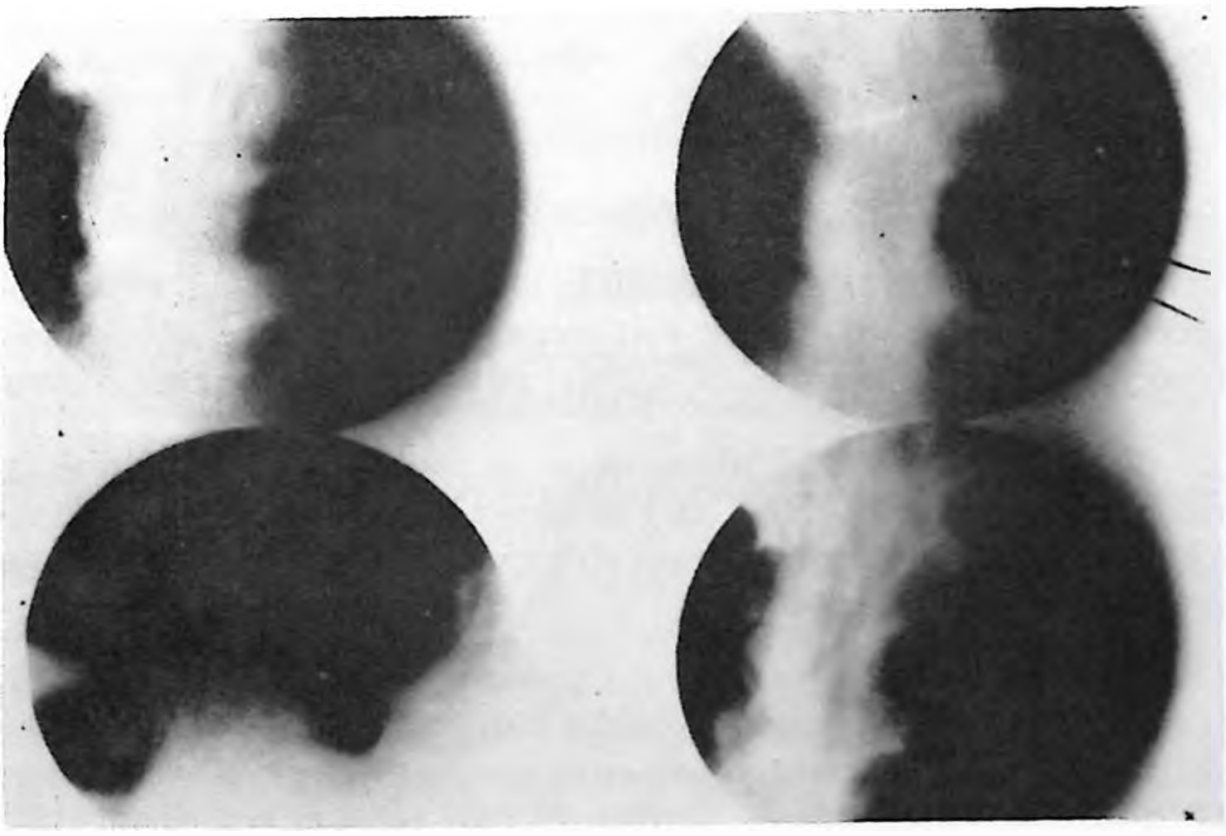

Figure 2

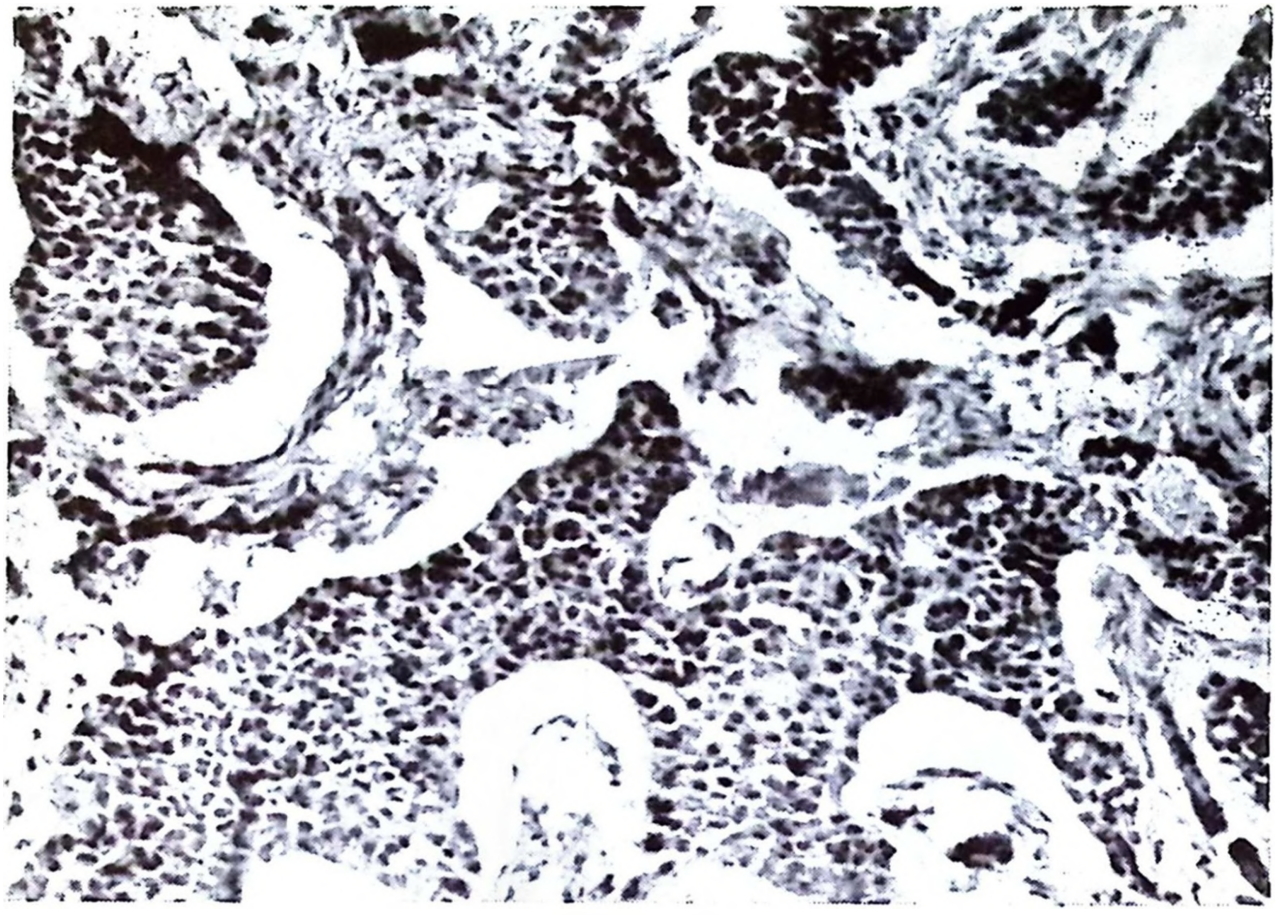

Figure 3

The patient had a good postoperative course and was discharged against medical advice on the 21. postoperative day. We were not able to contact the patient for follow up.

Discussion

There are two interesting aspects in this case of carcinoid. First is the very young age of the patient and second is the absence of carcinoid syndrome in the presence of widely metastasized carcinoid tumor.

Due to technical difficulties, we were not able to demonstrate the excessive amount of 5-HIAA and serotonin in the urine. However the diagnosis of carcinoid tumor was confirmed by the examination of the specimens by two pathologists.

Classically it is known that the upper gastrointestinal hemorrhage is one of the chief manifestation of the carcinoid of the stomach.[8] Our patient despite very careful questioning gave no history of hemorrhage. He only had one episode of diarrhea 20 days prior to admission which lasted only three days.

A previous report mentioned the mild manifestations of carcinoid syndrome despite a very large metastatic tumor with involvement of the liver.[5] We found our case to be similar regarding the clinical picture. It is also emphasized that the size of the metastasis in the liver closely correlates to the presence of the syndrome. In our patient, besides the invading tumor in the stomach, the hepatic metastases were so extensive that it was impossible to perform a lobectomy. It is interesting to note that carcinoid syndrome is said to be more prevalent among the malignant carcinoids arising from mid-gut, in our case the tumor probably arose from the stomach (foregut).[9]

The foregut tumors are known to secrete less 5-hydroxytryptophan and produce fewer carcinoid syndromes than midgut tumors but more than the hindgut tumors.

Conclusion

Carcinoid tumor, usually known to secrete serotonin and produce the well known syndrome when it has metastases in the liver, could sometimes be silent and mimmicks any other malignant process in the alimentary tract.

REFERENCES

1. Oberndorfer, S.: Karzinoide tumored des dunndarms, Frankfurter Z. Path. I: 426, 1907.
2. Rainford T. S.: Tumors of the small intestines, Arch. Surg. 25: 122, 321, 1932.
3. Mac Donald, R. A.: A study of 356 carcinoids of the gastrointestinal tract, Am. J. Med. 21: 867, 1956.
4. Lembeck F. :5 - Hydroxytryptamine in a carcinoid tumor, Nature. 172: 910, 1953.
5. Ayulo, A. J.: Carcinoid tumors of the gastrointestinal tract, Amer. J. Gastroentorology. 51: 138-143, 1969.
6. Huogh J. D.: Carcinoid of the rectum, Amer. Surgeon. 31: 450-452, 1965.
7. Galitis R. J.: The malignant carcinoid syndrome, Amer. J. Dig. Dis. 2: 630-647, 1966.
8. Barreto A.: Carcinoid tumors and the carcinoid syndrome, Amer. J. Gastroenterology 48: 125-134, 1967.
9. Anderson W. A. D.: Pathology Vol. 2., The C. V. Mosby Co., St. Louis, 1966, pp. 877-878.