

SPK

P.C. Abdominal wall

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See also
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Peutz-Jeghers Syndrome With Metastases to an Abdominal Incision

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Peutz-Jeghers syndrome consisting of the triad-gastrointestinal-polyps, mucocutaneous pigmentation, and familial history is a well recognized clinical entity.^{1,2} The polyps which are generally in the small intestine but which may be found throughout the gastrointestinal tract, are peculiar in that they contain all types of epithelial cells found in the gut arranged in the usual manner on a branching muscular stroma, and are thus felt to represent hamartomas.^{3,4} Because of this unusual histological appearance, they have often been misinterpreted as invading muscularis and are thus considered by some as being malignant in 15% to 20% of cases.¹ In reality, only six of the more than 300 cases reported have the polyps shown definite malignancy with metastases.⁵ The following case records the unusual occurrence of a metastases to the abdominal wall in a patient with Peutz-Jeghers syndrome.

Report of a Case

This 22-year-old white man was first seen at the Student Health Service of the University of Wisconsin Medical Center on Nov 15, 1965, because of dysphasia and a burning feeling in the throat of over a year's duration. The most impressive part of the physical examination, however, was the marked melanine pigmentation on his lower lip. In addition, he related that on July 17, 1961, he had a resection of 11 polyps situated in the stomach and upper jejunum near the ligament of Treitz. The surgeon stated, "These polyps are so numerous that it is impossible to count them, but . . . there are about 10 to the square inch." In the main, the microscopic sections of the polyps revealed "irregular glandular structures lined by very tall, pale epithelium having a basilar-placed nuclei with abundant fibrous connective tissue and scattered, smooth muscle fibers between the individual glands." About one of the gastric polyps and one of the three small bowel polyps, however, the pathologist remarked, "Apparently there was rupture of the glandular structure with spillage of mucus into the lamina propria, but no frank malignant changes are seen."

His father and two sisters had a diagnosis of gastric and small bowel polyps with episodes of hemorrhage and subsequent anemia. All showed similar mucocutaneous melanization.

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Fig 1.—Melanin pigmentation characteristic of Peutz-Jeghers disease on upper and lower lips.

Apparently, a paternal aunt had peculiar pigmentation on her lips but no gastrointestinal polyposis.

The physical examination revealed a thin, chronically ill male with marked pigmentation of his lower lip (Fig 1). Upper gastrointestinal and small bowel x-ray film series were normal. Gastric camera studies showed small polyps in the proximal portion of his stomach (Fig 2). Several hundred polyps were seen. The great majority

were less than 5 mm in diameter; two or three, however, were considerably larger in size.

He was next seen at the University of Wisconsin Health Service on Sept 15, 1967, because of a mass which had been present in the upper end of his abdominal incision for approximately six months and had gradually increased in size. In addition, he had noted progressive fatigue of three months' duration. His stools had al-

Fig 2.—Gastric camera view of stomach taken on Nov 30, 1965, revealing scattered polyps throughout the antrum, body, and fundus.

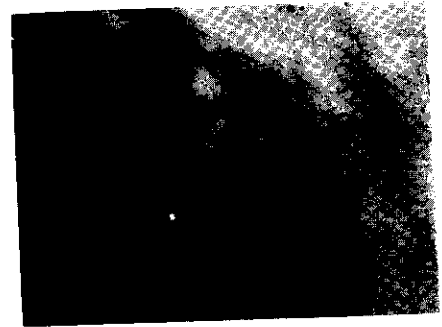


Fig 3.—Tissue from the abdominal wall.

ways been dark but for the past several weeks he claimed that there was red blood on the stool and tissue. He had no hematemesis.

Physical findings were unchanged since the previous admission except for the abdomen which revealed a hard, fixed 3 × 4 cm mass in the upper portion of the previous abdominal incision. Some areas of this felt softer than others, but it was definitely not cystic. The hematocrit was 28% and hemoglobin 7.4 gm/100 cc. Serum iron was 10 μ g and iron binding capacity 375 μ g/100 cc. Prothrombin time was 56% of normal. All other laboratory data including glucose, blood urea nitrogen (BUN), uric acid, cholesterol, sodium, potassium, chloride, CO₂, calcium, phosphorus, bilirubin, serum glutamic oxaloacetic transaminase (SGOT), lactic dehydrogenase (LDH), alkaline phosphatase, albumin, and total serum proteins were normal. Roentgenograms of the stomach and small bowel revealed a large polyp in the second part of the duodenum in the area of the ampulla of Vater and another in the proximal jejunum. Barium enema and air contrast studies showed a large polyp in the splenic flexure of the colon and a smaller polyp in the rectum.

Because of persistent bleeding and because it was demonstrated that he had several large polyps in the duodenum, jejunum, and colon, it was decided to resect the polyps and also examine the mass in the anterior abdominal wall.

The mass in the abdominal wall contained small cystic spaces which were filled with yellowish mucoid material. The tumor was completely excised and sent to pathology where the report was a low-grade metastatic adenocarcinoma (Fig 3). The fibrosis stroma was invaded by glands which vary in size. The lining cells lost their

ability to secrete mucin and contained moderately pleomorphic nuclei. Abdominal exploration revealed several large polyps which were individually removed through enterotomy incisions from the duodenum, upper jejunum, midjejunum, lower jejunum, upper ileum, and splenic flexure of the colon. There was a considerable range of cellular as well as structural atypias in the specimens. Some (Fig 4) were felt to represent hematomas usually described in this syndrome. (The glands, which vary in size, are lined by mucin-secreting cells with regular nuclei and supported by smooth muscle bands. The disordered pattern of epithelial elements mixed with smooth muscle can be erroneously interpreted as adenocarcinoma.) Others (Fig 5) were thought to be malignant. There was a linear area of scarring in the midjejunum which was very friable and indurated so a biopsy of this was taken. This was apparently the site of the polyp which was previously situated 18 cm distal to the ligament of Treitz and resected in July of 1961. The frozen section report was carcinoma, similar to that on the anterior abdominal wall (Fig 5 and 6). Several mesenteric lymph nodes surrounding all of the tumors were biopsied and reported as negative.

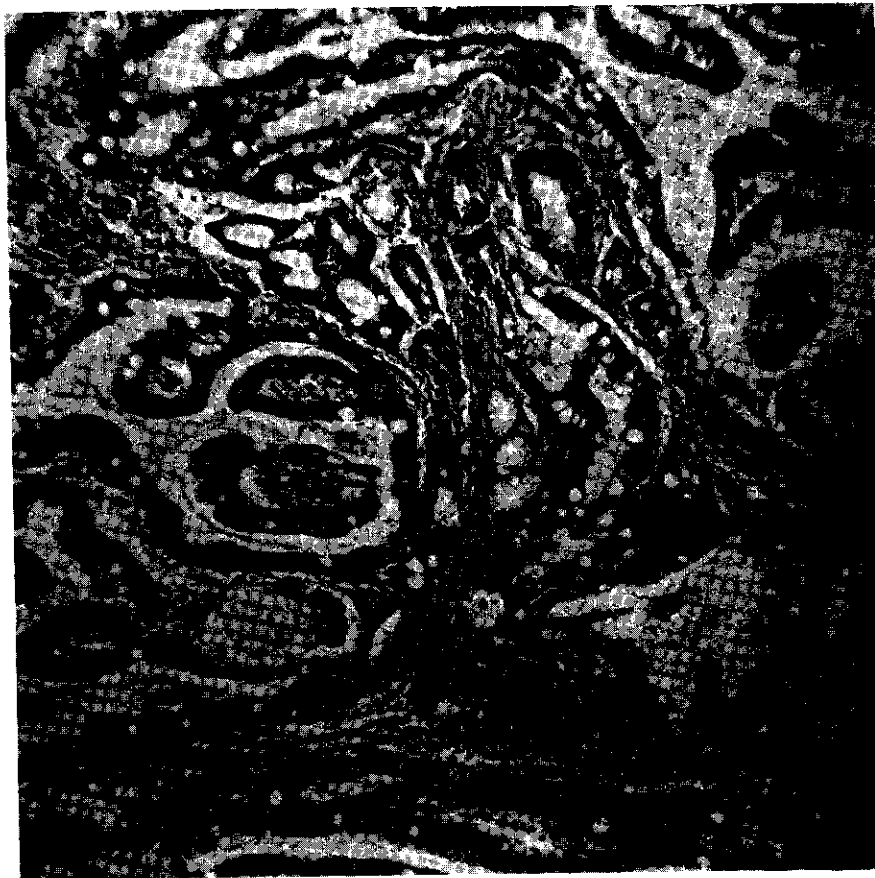
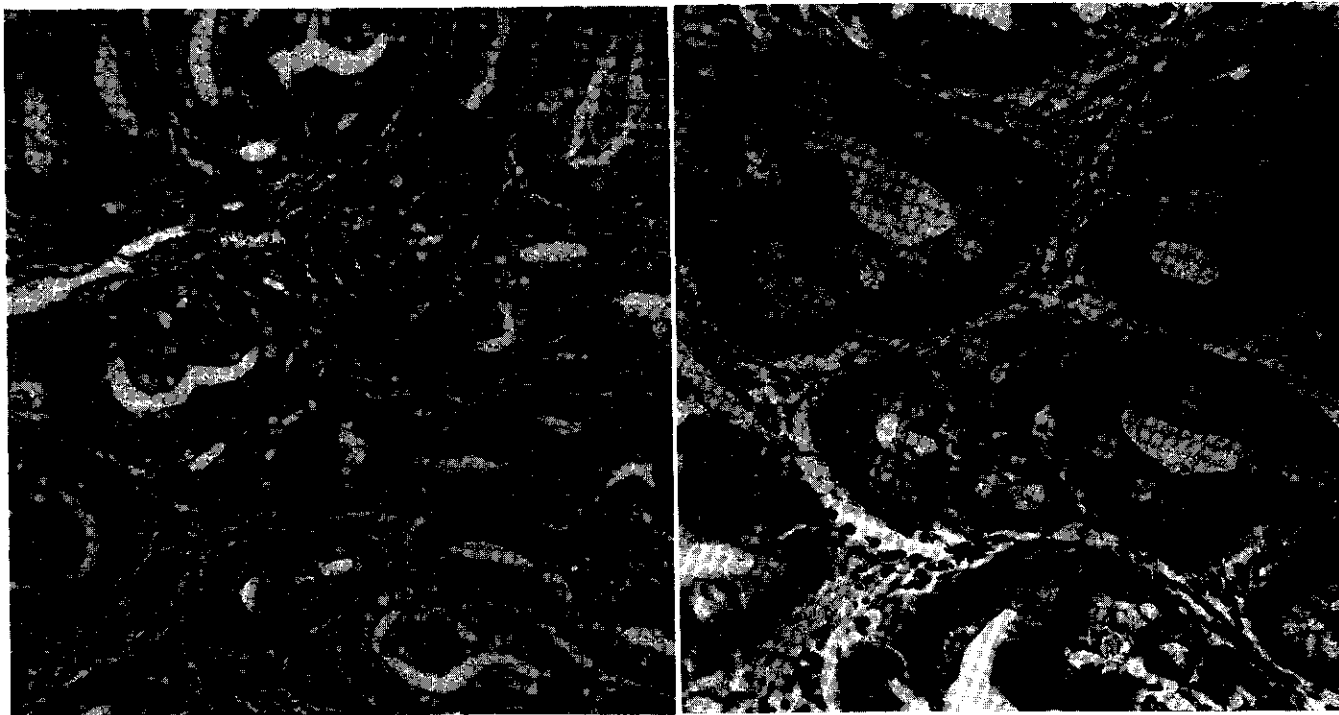


Fig 4.—Duodenal polyps; glands, which vary in size, lined by mucin-secreting cells with regular nuclei and supported by smooth muscle bands.

Fig 5.—Polyp of ileum. Glands are lined by mucin-secreting cells with slightly irregular nuclei. High magnification reveals considerable mitotic activity (X 250).



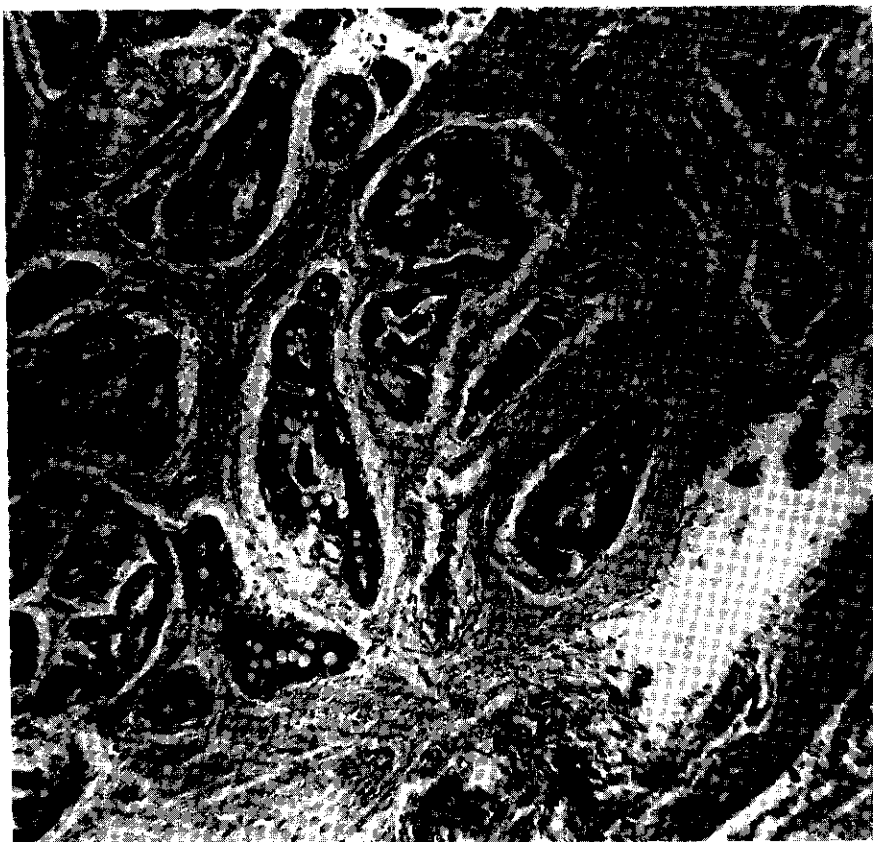


Fig 6.—Polyp of upper jejunum. In the lower portion of the lesion, glands invade the muscular layer of the jejunum.

Comment

Complete reviews of the malignant potential of Peutz-Jeghers disease have recently appeared in the literature.⁶⁻¹¹ In the earlier studies of the polyps there was thought to be a significant risk of malignant degeneration, but careful studies have pointed out the discrepancy between the benign clinical course of the patient and the pathological findings. The patient herein reported demonstrates, however, the malignant potential of the polyps in Peutz-Jeghers syndrome from the standpoint of multiplicity and also in their ability to metastasize. It is quite surprising that a tumor of such low malignant potential presented as an incisional recurrence.

In spite of the fact that a margin

of normal tissue was removed on all sides of the abdominal wall recurrence, it is highly unlikely that the resection was curative. In addition, any number of remaining polyps could also be malignant. Therefore, this patient was started on cytotoxic chemotherapy. Weekly fluorouracil was given in hope that it would block successive waves of tumor cells as they entered into their vulnerable phase of deoxyribonucleic acid (DNA) synthesis. Because the tumor was markedly differentiated, it was presumed that the generation time of the cells would be long and, therefore, weekly therapy was chosen over month courses.

Summary

A case of Peutz-Jeghers syndrome is reported in which there

was metastasis to an abdominal wall incision from a jejunal tumor removed years previously. In addition, the patient had other malignant tumors resected from his ileum and colon. The patient is presently being treated with fluorouracil in the hope of destroying other potential residual foci of malignancy.

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References

1. Berkowitz, S.B.; Pearl, M.J.; and Shapiro, N.H.: Syndrome of Intestinal Polyposis with Melanosis of the Lips and Buccal Mucosa: A Study of the Incidence and Location of Malignancy, *Ann Surg* 141:129-133 (Jan) 1955.
2. Warren, K.W.; Kune, G.A.; and Poulantzas, J.K.: Peutz-Jeghers Syndrome with Carcinoma of the Duodenum, *Lahey Clin Found Bull* 14:97-102, 1965.
3. Bartholomew, L.G.; Dahlin, D.C.; and Waugh, J.M.: Intestinal Polyposis Associated with Mucocutaneous Melanin Pigmentation (Peutz-Jeghers Syndrome), *Gastroenterology* 32:434-451 (March) 1957.
4. Wenzl, J.E., et al: Gastrointestinal Polyposis with Mucocutaneous Pigmentation in Children (Peutz-Jeghers Syndrome), *Pediatrics* 28:655-661 (Oct) 1961.
5. Reid, J.D.: Duodenal Carcinoma in the Peutz-Jeghers Syndrome, *Cancer* 18:970-977 (Aug) 1965.
6. Berkowitz, S.B.; Pearl, M.J.; and Shapiro, N.H.: Syndrome of Intestinal Polyposis, *Ann Surg* 141:129-133 (Jan) 1955.
7. Burdick, D.; Prior, J.T.; and Scanlon, G.T.: Peutz-Jeghers Syndrome: A Clinical-Pathological Study of a Large Family with a 10-year Follow-up, *Cancer* 16:854-867 (July) 1963.
8. Humphries, A.L.; Shepherd, M.A.; and Peters, H.J.: Peutz-Jeghers Syndrome With Colonic Adenocarcinoma and Ovarian Tumor, *JAMA* 197:296-298 (July 25) 1966.
9. McKusick, V.A.: Genetic Factors in Intestinal Polyposis, *JAMA* 182:271-277 (Oct 20) 1962.
10. Warren, K.W.; Kune, G.A.; and Poulantzas, J.K.: Peutz-Jeghers Syndrome With Carcinoma of the Duodenum and Jejunum, *Lahey Clin Found Bull* 14:97-102, 1965.
11. Williams, J.P., and Knudsen, A.: Peutz-Jeghers Syndrome With Metastasizing Duodenal Carcinoma, *GUT* 6:179-184 (April) 1965.