# Recurrent Solitary Fibrous Tumor with Severe Hypoglycemia: A Case of Tumor-Induced Metabolic Disturbances

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**Introduction:** Solitary fibrous tumors (SFTs) are rare mesenchymal neoplasms originating in the pleura but also appear in extrapleural sites such as the abdomen. Although often benign, they can exhibit malignant behavior, particularly upon recurrence. This case highlights the diagnostic and management challenges of SFTs, particularly when complicated by metabolic disturbances like hypoglycemia.

**Case Presentation:** In 2010, the patient presented with a large abdominal mass which was resected. Pathology identified it as a nonmalignant "fibrous" tumor with negative margins. The patient has radiation exposure history from Chernobyl during military service in Germany. In September 2023, the patient returned with abdominal distention and altered mental status secondary to severe hypoglycemia. Laboratory tests revealed a serum glucose of 34 mg/dL, low insulin, and low insulin-like growth factor-2 (IGF-2). The hemoglobin A1c was 4.9%, suggesting the hypoglycemia was an acute issue and not poor glycemic control. CT revealed a large, heterogeneous mesenteric mass adjacent the small bowel and left colon, indicating tumor recurrence (Fig. 1). In October 2023, en bloc resection of the mass and small bowel was performed with placement of bilateral ureteral stents (Fig. 2). Pathology confirmed recurrent SFT (Fig. 3A-C). Hypoglycemia resolved post-surgery. Surveillance was advised after multidisciplinary discussion. At follow-up July 2024, CT scans showed no tumor recurrence.

**Conclusion:** SFTs, while generally benign, can exhibit malignant behavior, especially when recurrent, large, or with atypical histology. This patient's recurrence, coupled with hypoglycemia, suggests an aggressive tumor phenotype. This patient’s hypoglycemia can be attributed to ectopic IGF-2 produced by

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the SFT. Low IGF-2 and insulin levels with the large mass indicate the tumor's role in mediating episodic hypoglycemia. Recurrent SFTs underscore the complex interplay between tumor biology and metabolic disturbances. Continuous surveillance and prompt intervention is crucial, given recurrence risk and complications. Further research of molecular mechanisms driving the hypoglycemia in SFTs may enhance management strategies.

**Keywords:** Oncology, Abdominal Pain

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