Giant Myelolipoma of the Adrenal Gland With Adenocarcinoma of the Colon: A Rare Surgico-Pathological Presentation

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Abstract
The authors describe a case of myelolipoma, a relatively rare benign nonfunctioning tumor of the adrenal gland composed of mature adipose tissue interspersed with hematopoietic elements. Most myelolipomas are usually seen as an incidental finding at autopsy; however, very few symptomatic cases of myelolipoma are surgically resected. In this case of giant myelolipoma, an incidental finding of a stenotic growth in the transverse colon was also present. Histologically, the stenosing growth appeared as a well-differentiated adenocarcinoma.

Report of a Case
A 45-year-old man presented with a history of a large mass on the right side of his abdomen and a history of altered bowel habits for a period of 3 months. The patient was admitted to SMHS Hospital, Srinagar, Kashmir, India for evaluation. A general physical examination revealed normal parameters with moderate obesity. An abdominal examination revealed a mass extending from the right costal margin to the right lumbar region. A computed tomography (CT) scan revealed the presence of a solid mass involving the right adrenal gland. A fine-needle aspiration (FNA) biopsy of this mass was performed prior to surgical intervention. The FNA smears showed only mature adipose tissue. Surgical intervention was carried out through a transverse incision extending up to the right lumbar region. A large, tan-yellow, well-encapsulated retroperitoneal mass measuring 25 × 14 × 11 cm, along with normal-appearing adrenal tissue, was resected. Incidentally, during intraoperative palpation, a firm stenosing mass in the transverse colon was felt and resected along with a segment of large gut.

Anatomic Pathology Findings
Specimen 1 (myelolipoma): This specimen appeared grossly as a well-encapsulated, tan-yellow, soft, 25 × 14 × 11 cm, > 4 kg mass with prominent vessels on the surface and areas of hemorrhage (Image 1A). Cut-tissue sections of this mass revealed a yellow, homogenous surface with a central grayish-brown area measuring 10 × 10 cm. A small rim of adrenal gland tissue was identified bordering the tumor (Image 1B).

Microscopy of Specimen 1 (adrenal mass): The tumor was composed predominantly of mature adipose tissue interspersed by hematopoietic cells consisting of myeloid cells, erythroid cells, and megakaryocytes; small foci of hemorrhages were present. The tumor was rimed by normal adrenal cortical tissue (Image 1C).

Specimen 2 (large gut): Grossly measured as 14 × 5 cm without mucosity. A stenotic growth was felt 6 cm away from 1 resected end and 5 cm away from the other resected end. Proximal to the stenotic growth, a dilated segment of colon measured 4 × 6.5 cm. Cut-tissue sections of this growth revealed a grey-white, 3-cm annular mass. The mucosa close to the annular stenotic growth was flattened up to an area of 4 cm, and the dilated portion measured 4 × 6.5 cm. The growth extended into the muscularis propria and no lymph nodes were identified (Image 2A).

Microscopy of Specimen 2: Microscopy revealed a well-differentiated adenocarcinoma (maximum size, 3 cm) identified with transmural infiltration, overlying serosa that was free of tumor invasion, and no lymph nodes (Image 2B and 2C).

Discussion
Myelolipomas are benign nonfunctioning tumors of the adrenal gland composed of hematopoietic cellular elements and adipose tissue. They are rare tumors, mostly seen at autopsy. Approximately 160 cases of clinically-asymptomatic myelolipoma of the adrenal gland have been reported as an incidental finding at autopsy. Twenty cases of clinically-symptomatic, surgically-resected cases of myelolipoma of the adrenal gland have been reported. Myelolipomas originate in the adrenal cortex and their surfaces consist of a pseudo capsule of compressed zona glomerulosa and fasciculate tissue. The size of these tumors varies, and, in cases such as this one, the large size (25 × 14 × 11 cm) of the tumor caused it to be clinically recognizable and symptomatic. Histologically, these tumors are predominantly composed of mature adipose tissue with minimal hematopoietic cells. Areas of hemorrhage and fat necrosis can also be present. Myelolipomas have been categorized as either type 1, consisting
of predominantly lipomatous tissue with minimal hemopoietic elements, or type 2, in which the hemopoietic elements predominate. The case reported here is type 1. Giant myelolipomas of varying sizes have been reported, with a maximum size of 20 × 18 × 10 cm.2,3 The present case is a giant myelolipoma, 25 × 14 × 11 cm in size and > 4 kg in weight. A similar case of giant myelolipoma more than 4 kg in weight has been reported previously.4 Myelolipomas typically occur in the 25- to 65-year-old age group and most often in the fifth and sixth decade of life. In the present case, the patient was a 45-year-old, moderately-obese male. Several hundred cases of myelolipomas have been reported in the literature, and when myelolipomas become large and are symptomatic they are surgically removed.5 The stenosing colonic cancer, discovered in this patient as an incidental finding during intraoperative palpation, was confirmed by light microscopy as a well-differentiated adenocarcinoma of the colon. Guiliani and colleagues6 reported a similar case in a 71-year-old female. Moreover, many other tumors associated with myelolipomas have been reported by Burrows and colleagues,7 Guiliani and colleagues,6 and Merchant and colleagues,8 and, in this case, colonic cancer was associated with myelolipoma of the adrenal gland.

Myelolipomas are asymptomatic, benign, nonfunctional tumors of the adrenal gland, usually less than 4 cm in size, and typically observed at autopsy. Giant myelolipomas that are clinically symptomatic are surgically resected and are rarely associated with other tumors. As in the present case, myelolipomas associated with other tumors can be discovered incidentally. This patient presented with a giant myelolipoma associated with stenosing colonic cancer.1