Myelolipoma

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Definition

Myelolipoma is a benign neoplasm composed of both adipose and hematopoietic cells.

Epidemiology and Presentation

Myelolipoma usually occurs in adults older than 40 years, without significant gender differences. It typically locates in the adrenal gland, although it has been rarely described also outside this gland (e.g., in the presacral region or mediastinum). Adrenal myelolipomas are the second most common adrenal incidentalomas (they account for 5–15% of adrenal incidentalomas) after benign adrenal adenomas.

In most cases, myelolipoma is asymptomatic and is incidentally discovered during radiological studies performed for other reasons (incidentaloma). The mass is generally smaller than 5 cm in size, but much larger lesions have been described; larger lesions may become symptomatic.

Computed tomography is the best imaging modality for the diagnosis of adrenal myelolipoma (hypodense well-circumscribed heterogeneous mass; virtually all myelolipomas have some area of fat, although it may be very small).

Etiology and Predisposition

An increased incidence of adrenal myelolipomas is observed in congenital adrenal hyperplasia, which has led to the hypothesis that high levels of ACTH might play a role in the pathogenesis of this disease.

Adrenal myelolipoma has been also associated with conditions like Cushing disease, obesity, hyperlipidemia, hypertension, and diabetes.

S. Mocellin, *Soft Tissue Tumors*, https://doi.org/10.1007/978-3-030-58710-9_174

Pathology

Myelolipoma is typically composed of mature adipose tissue (no atypia, no lipoblasts) and mature bone marrow hematopoietic elements (all three lines: myeloid, erythroid, and megakaryocytic).

Differential diagnosis may be needed with the following: extramedullary hematopoiesis, lipoma, well-differentiated liposarcoma, angiomyolipoma, myeloid sarcoma, and adrenocortical adenoma.

Biomarkers

There is no specific biomarker.

Prognosis

Myelolipoma is a benign neoplasm.

Therapy

Treatment may not be necessary if radiological diagnosis is reasonably certain. In case of uncertain diagnosis (or in symptomatic cases), surgery (adrenalectomy) is a definitive treatment.

Suggested Readings

Adapa (2019) Adrenal incidentaloma: challenges in diagnosing adrenal myelolipoma. J Investig Med High Impact Case Rep 7:2324709619870311

Cochetti (2019) Robotic treatment of giant adrenal myelolipoma: a case report and review of the literature. Mol Clin Oncol 10(5):492–496

Diaz-Perez (2019) Epithelioid hemangioendothelioma arising within mediastinal myelolipoma: a WWTR1-driven composite neoplasm. Int J Surg Pathol 27(6):664–668

Goel (2018) Bilateral posterior mediastinal primary myelolipoma. Ann Thorac Surg 106(5):e235–e237

Sethi (2018) Myelolipoma of the pelvis: a case report and review of literature. Front Oncol 8:251

Hamidi (2020) Clinical course of adrenal myelolipoma: A long-term longitudinal follow-up study. Clin Endocrinol. [Epub ahead of print]

Pakalniskis (2020) Adrenal collision tumour comprised of adrenocortical carcinoma and myelolipoma in a patient with congenital adrenal hyperplasia. J Med Imaging Radiat Oncol 64(1):67–68

Vigutto (2019) Giant retroperitoneal myelolipoma: an unusual diagnostic GI challenge-case report and review of the literature. Dig Dis Sci 64(12):3431–3435