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Original Research Paper

Pathology

ADRENAL MYELOLIPOMAS: A STUDY OF 15 YEARS IN A TERTIARTY CARE CENTRE.

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ABSTRACT

Objectives: To study the histopathology of Myelolipomas in resected adrenalectomy specimens at a tertiary care hospital over a period of 15 years.

Materials and Methods: Myelolipomas in resected adrenalectomy specimens over a period of 15years from June 2003 to May 2018 were studied. Relevant clinical details were collected from record section of the department.

Results: Of the total of 12 cases studied patients presented in 3rd to 5th decade of life with male to female ratio of 5: 7. Most common presentation in our patients was flank pain followed by incidental finding on imaging.

Conclusion: Adrenal myelolipomas are rare tumors, mostly of benign nature, and clinically silent. However, their "incidental" diagnosis should warrant careful diagnostic study to plan appropriate treatment .There is increasing number of myelolipomas reported with endocrine abnormalities which necessitate the use of thorough preoperative workup. Smaller, asymptomatic myelolipomas can be observed expectantly with surgical resection reserved for larger or symptomatic lesions.

KEYWORDS : -Adrenal mass, Myelolipomas, Incidentilomas.

INTRODUCTION:

Adrenal myelolipoma is a rare cortical tumor composed of variable mixture of mature adipose and hematopoietic elements. There is no malignant potential and the lesions are endocrinologically non-functioning. They arise in the zona fasciculata of the gland. Myelolipomas are usually asymptomatic and discovered incidentally although they may cause symptoms if they undergo haemorrhage or become large and exert a local pressure effect on adjacent structures. It was initially described by Gierke in 1905 and subsequently termed as formations myelolipomatoses by Oberling in 1929 [1]. In the past, these lesions used to be primarily detected at autopsy or in conditions where massive growth or an alteration in the hormonal production led to clinical presentation. However, In recent times, as a result of widespread use of non-invasive cross-sectional imaging modalities such as ultrasonography (US), computed tomography (CT) and magnetic resonance imaging(MRI),incidental detection is more common [2]. The tumor appears to affect men and women equally and most commonly found between the fifth and the seventh decade of life [2]. Accounting for 3–5% of all primary tumors of the adrenals, the true incidence of these tumors is not known, although it is thought to be 0.08%–0.4%, with increased incidence noted in the later decades of life [3]. The majority of these tumors are unilateral, small, and asymptomatic although some bilateral myelolipomas have been described [2]. They are generally nonsecreting in nature, and only one case of secreting myelolipoma has been reported so far [3]. These lesions are often smaller than 4cm in diameter, and the largest reported in the literature was 31 × 24.5 × 11.5cm and weighed 6kg [3].After surgical resection, these lesions do not recur. These tumors are generally hormonally-inactive, although there are case reports of their association with overproduction of adrenal hormones.

RESULTS :

The present study includes 12cases of Myelolipoma reported in the Department of pathology at Sheri-Kashmir Institute Of Medical Sciences (SKIMS) Srinagar Kashmir Mean Age for myelolipomas was 42 years with female predominance. Tumor is found on left side in 8 cases and 4 cases were on right side. Contrast-enhanced CT scan (figure 1) of the upper abdomen reveals the heterogeneous mass with variable central and peripheral attenuation. Weight ranges from 20 gm to 150 gm. Tumor dimension ranges from 1.5x1cm to 20x16 cm. (figure 2) , Cut section(figure 3) was yellow to grey brown . Calcification was noted in 4 of the cases. Microscopy (figure 4 & 5) comprised of varying proportions of adipose tissue admixed with areas of hematopoietic tissue. Necrosis and capsular invasion was absent.

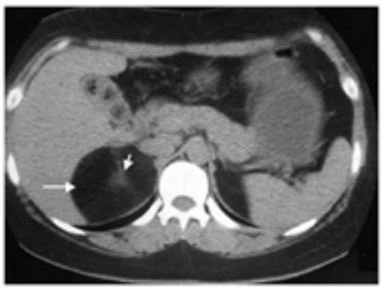

Figure1: CT appearance of myelolipoma. Contrast-enhanced CT scan of the upper abdomen showing the heterogeneous mass covering upper right retroperitoneal space (arrows) with variable central and peripheral attenuation.

Figure 2: Gross picture of adrenal showing congestion.

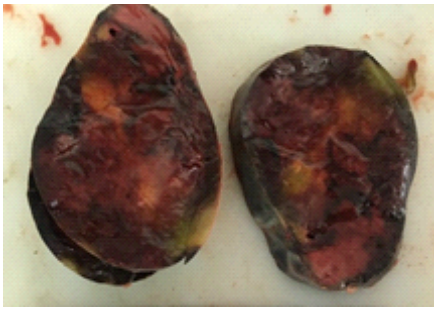

Figure 3: Gross Cut surface of adrenal myelolipoma showing a variegated appearance of dark brown and yellowish areas.

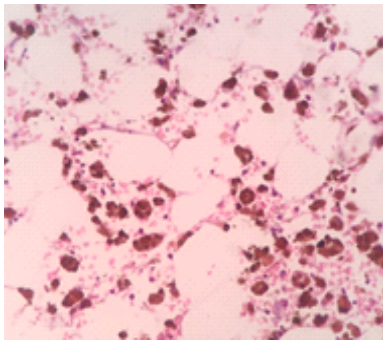

Figure 5: Photomicrograph shows typical histological features of myelolipoma comprising varying proportions of adipose tissue admixed with areas of hematopoietic tissue (H& E stain, ×40).

DISCUSSION:

Adrenal myelolipoma constitutes a rare entity in urological practice. They are composed of variable proportions of mature adipose tissue and active hematopoietic elements. They are also called "incidentalomas" since their diagnosis is based on autopsy or imaging modalities which are performed for reasons usually unrelated to adrenal diseases. Incidence ranges from 0.08% to 0.4%, and less than 300 cases were reported in the literature before 2000 [4]. However, their prevalence appears to be increasing up to 10%, due to the increased use of non-invasive and enhanced imaging techniques [5]. There are several theories for the etiology and the natural history of adrenal myelolipoma [6–8]. However, the most widely accepted theory is adrenocortical cell metaplasia in response to stimuli, such as necrosis, inflammation, infection, or stress [9]. This chronic stimulation to the adrenal gland, which is evidenced by the increased incidence of the lesion in the advanced age [10], could trigger the development of benign as well as malignant tumors. The conditions often associated with adrenal myelolipomas include Cushing's disease, obesity, hypertension, and diabetes which can be characterized as major adrenal stimuli [11]. Other contemporary authors have speculated about a stressful lifestyle Case Reports in Urology 3 and an unbalanced diet as factors that may be involved in the pathogenesis of this tumor [11]. Several case series have reported the predominance of the tumor in the right adrenal gland [12], which is in contrary to our study . Ultrasonography, computed tomography, and MRI are all effective in diagnosing more than 90% of adrenal myelolipoma on the basis of identification of fat, with CT scan being the most sensitive [2, 12]. Since these tumors are non-functional, endocrinological evaluations may not be useful, although there is case report of a secreting myelolipoma causing hypertension [3]. The differential diagnosis should include renal angiomyolipoma, retroperitoneal lipoma, and liposarcoma [13]. Management of adrenal myelolipoma should be considered on individual basis. Small lesions, which are asymptomatic and measure less than 5cm, should be monitored over a period of 1-2 years with imaging controls. [11]. It is suggested that symptomatic tumors or myelolipomas larger than 7cm should be surgically excised [2], so as to prevent a urological emergency since there are reports of spontaneous rupture and hemorrhage of the mass presented with life threatening cardiovascular shock [14]. Extraperitoneal approach is preferable than midline incision as it leads to quicker recovery of the patient and lesser postoperative complications [11]. This approach, however, is not indicated for masses larger than 10cm or in cases where there are adhesions and infiltration of the surrounding structures [15]

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