Adrenal myelolipoma: a rare case
Kheman Rajkomar, Isaac Cranshaw

Adrenal myelolipomas are benign and hormonally inactive tumours that have been described in 1929 by the French pathologist, Professor Charles Oberling. Microscopically it is made up of adipose and hematopoietic tissue. Its pathogenesis is unclear but the favoured mechanism is reticuloendothelial cell metaplasia that is triggered by necrosis, infection or stress.

This lesion is still not clearly defined as it is a rare entity. The incidence is 0.08–0.2% as quoted by autopsy series. Our knowledge is mainly based on published case series and case reports.

The case reported here is the sixth largest such lesion reported in the literature. Moreover it has some malignant radiological features that distinguish it from other such reported lesions.

Case report
A 47-year-old man with schizophrenia presented to the hospital in July 2008 with a urinary tract infection. On examination he had abdominal distension and right flank tenderness. An abdominal ultrasound revealed a large homogeneous mass, about 3700cc in volume, displacing the right kidney inferomedially (Figure 1).

Figure 1. Ultrasound of right flank

The sonographic finding prompted a CT of the abdomen to further define the lesion. A 22×22×16cm right retroperitoneal well circumscribed mass was seen with mixed fat and soft tissue density. The right lobe of the liver was indented, suggestive of invasion. A lesion was noted in segment 8, which raised the possibility of metastatic liposarcoma (Figure 2).
Interestingly there was no paraortic lymphadenopathy noted on radiological investigation.

On 23 July 2008, a trial of excision of this lesion was attempted. A J-shaped incision was made on his right upper quadrant. A large retroperitoneal mass was seen, with clear planes around the kidney, liver and IVC. The adrenal gland was resected together with the mass. The liver lesions noted on CT were haemangiomas. The specimen was 220×180×120mm, and weighed 3695g (Figure 3).

Figure 3. Right retroperitoneal mass with adrenal gland in the lower left corner
The adrenal gland was distinct from the mass. On cut section the lesion was fatty yellow with less than 20% patchy necrosis seen. The tumour was made up of mature adipocytes and haematopoietic cells. No malignant tissue was seen. The features were consistent with an adrenal myelolipoma.

Apart from an episode of opiate overdose the patient made an uneventful recovery and was discharged from hospital eight days after admission.

**Discussion**

A PubMed search reveals that our case is the sixth largest adrenal myelolipoma that has been reported (Table 1). Boudreaux et al\(^4\) reported the second biggest one (5900g), although it included the kidney and some retroperitoneal tissue too.

<table>
<thead>
<tr>
<th>Cases reported</th>
<th>Size (cm)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akamatsu et al(^7)</td>
<td>31</td>
<td>6000</td>
</tr>
<tr>
<td>Boudreaux et al(^4)</td>
<td>34</td>
<td>5900</td>
</tr>
<tr>
<td>Wilhelmus et al(^5)</td>
<td>30</td>
<td>5500</td>
</tr>
<tr>
<td>O'Daniel-Pierce et al(^6)</td>
<td>30</td>
<td>4370</td>
</tr>
<tr>
<td>Lamont et al(^8)</td>
<td>40</td>
<td>4254</td>
</tr>
</tbody>
</table>

Apart from its size, its radiological appearance was singular. Adrenal lesions greater than 6cm with an inhomogeneous consistency are more likely to be malignant.\(^9\) This lesion’s bosselated appearance with mixed soft and fat tissue density on CT was unusual for an adrenal myelipoma.

Those lesions are typically asymptomatic. However, they can present with abdominal or flank pain as a result of haemorrhage, necrosis or pressure effect on surrounding organs. A study of the largest series published shows that they are mostly incidentally picked up on imaging. 58% and 75% of the adrenal myelolipomas studied by Meyer et al\(^10\) and Han et al\(^11\) respectively were asymptomatic. Interestingly in Meyer’s series symptomatic myelolipomas were smaller than ones picked up incidentally.

We also looked at the therapeutic options offered to patients in both series. Meyer et al resected all the lesions from their patients. Han et al on the other hand were selective, offering surgery to large or symptomatic myelolipomas—i.e. to only 25% of their patients. Their 3-year clinical and radiological follow-up did not reveal any complications from the adrenal myelolipomas.

We hope that as more cases get reported more light will be shed on this rare lesion.

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