SOLITARY ADRENAL METASTASIS FROM COLORECTAL CANCER: REPORT OF A CASE

SUMMARY:
Background: Patients with adrenal metastasis are regarded as cases of diffuse systemic spread and considered unsuitable for surgical resection. We report an operable case of adrenal metastasis from colorectal carcinoma in a 77-year-old man.

Case presentation: Five months after sigmoidectomy for the primary tumour, left lower pneumonectomy was performed for a solitary lung metastasis. Six months later a left adrenal metastasis was detected by abdominal CT, as sole evidence of metastatic disease. Open left anterior adrenalectomy through a Mercedes-type incision was performed. The histopathological examination revealed adenocarcinoma compatible with the colorectal carcinoma resected 11 months earlier. The patient received adjuvant chemotherapy after each operation and is alive and free of disease 17 months after the adrenalectomy.

Conclusion: Although the prognosis of adrenal metastasis from colorectal cancer is poor, the complete removal of the solitary adrenal metastasis should be done to achieve good prognosis

Key Words: Colorectal cancer, adrenal metastasis, adrenalectomy, lung metastasis, long time survival

METASTAZA SOLITARA DE GLANDA SUPRARENALA IN CANCERUL COLORECTAL: PREZENTARE DE CAZ

REZUMAT:
Introducere: Pacienții cu metastaze la nivelul glandelor suprarenale sunt considerați depășiți din punct de vedere chirurgical fiind cazuri cu metastază sistemică difuză. Raportăm un caz de metastază de glandă suprarenală în cancer colorectal la un pacient de 77 de ani.

Prezentare de caz: Pacient la care se practica rezeție segmentară de sigmă pentru o tumora primară, dezvolta la 5 luni postoperator o metastază pulmonară solitară care este extirpată prin incizie unghiulară. La sase luni postoperator o metastază la nivelul glandei suprarenale stângi a fost decelată cu ocazia unui CT abdominal, ca singură dovadă a bolii metastatic. S-a practicat adrenalectomie stângă anterioară clasica prin incizia Mercedes. Examenul histopatologic a evidențiat adenocarcinomul compatibil cu cancerul colorectal operat în urma cu 11 luni. Pacientul a beneficiat de chimioterapie adjuvantă și are o supraviețuire fară boală de 17 luni de la suprarenalectomie.

Concluzii: Deși prognosticul pacienților cu metastază de glandă suprarenală în cancerul colorectal este rezervat, rezeția completă a metastazei solitare de la nivelul glandei suprarenale ar trebui realizată pentru a obține un prognostic bun.

Received for publication: 01.05.2010
Revised: 21.07.2010

INTRODUCTION

Adrenal metastasis most commonly occurs in patients with lung, breast and renal cancer (1,2). Based on autopsy reports, adrenal gland metastasis is also not unusual. In general, metastasis to the adrenal gland is regarded as an indicator of widespread disease, but in rare cases, isolated adrenal metastasis can be found (3-6). Although the incidence varies among reports, it is generally accepted that adrenal metastasis from colorectal cancer (CRC) is relatively rare. Surgical procedure for this disease state is controversial;

Correspondence to: R. Tirziu, Clinic of Emergency General Surgery, City Emergency Hospital of Timisoara Gh.Dima 2, Timisoara
according to several previously reported cases. Surgical resection seems to be able to provide a survival benefit for selected patients, whereas radiation and chemotherapy have relatively poor results for these lesions (1,4,7).

**CASE REPORT**

We report a 77-year-old male patient with good past health and no family history of malignancy.

He was admitted in a county hospital from another region due to anaemic symptoms, distending discomfort over the left upper quadrant of the abdomen and weight loss of 14 kilograms over six months. Colonoscopy revealed a colon tumour at the sigmoid colon. Sigmoidectomy was performed. Histopathology of the resected specimen showed moderately differentiated adenocarcinoma. His postoperative course was uneventful.

Five months after the operation, the abdominal C.T. detected a tumour of 2 cm in diameter in the lower lobe of the left lung. He was transferred to the Thoracic Surgery Department from the City Emergency Hospital of Timisoara; Left lower pneumonectomy was performed; microscopic examination showed complete removal of a metastatic, moderately differentiated adenocarcinoma, without vascular infiltration, compatible with the resected sigmoid carcinoma.
Six months after the lower pneumonectomy a follow-up CT identified a nodule in the left adrenal gland, 2.2 × 1.1 cm in size.

Complete blood count revealed anaemia with a haemoglobin level of 7.5 g/dl, and white cell count of 7.10 x 10^9/L. Liver and renal function were normal.

Since there were no other signs of local recurrence or distant metastasis on radiological, endoscopic and laboratory examinations, with CEA level still within the normal range, the left adrenal mass was regarded as an isolated heterochronic metastasis from sigmoid carcinoma. Open left anterior adrenalectomy through a Mercedes-type incision was performed.

Histopathological examination and immunohistochemical studies showed complete removal of a well-differentiated adenocarcinoma compatible to the sigmoid carcinoma resected 11 months earlier. The postoperative clinical course was uneventful; intestinal transit is resumed 48 hours later. The patient was discharged 9 days after the operation.

**DISCUSSION**

Although the liver and the lung are the main metastatic sites, the incidence of adrenal metastasis from colorectal cancer is not rare in autopsy series and ranges from 1.9% to 17.4%, according to different reports (Table 1)(8-12,13-15). However, reports of a very low incidence could be attributed to adrenal metastasis being mistaken for lymph node metastasis adjacent to the aorta.

The rate of detecting clinically silent adrenal masses has increased due to the widespread use of abdominal imaging modalities, (16,17) including ultrasonography, CT,(18) and MRI.(19)

It is conceived that a number of routes of adrenal metastasis from CRC exist, including systemic venous, portal venous, arterial, and lymphatic routes( 2). Katayama et al. suggested that there is a route of hematogenous metastasis from the primary lesion via the lung to the adrenal gland (3).

Thus, the significance of long-term follow-up after resection of CRC for early detection of adrenal metastasis, especially after resection of lung metastasis, should not be overlooked.

Although an adrenal metastasis is usually found as part of widespread metastasis,(13-15) there are some cases in which curative resection of a solitary adrenal metastasis from colorectal cancer is feasible.(20–22) It is generally accepted that a solitary adrenal metastasis should be resected to achieve good prognosis, although the incidence of truly resectable such lesions is very low.(23, 24)

Laparoscopic adrenalectomy has rapidly replaced open adrenalectomy as the procedure of choice for benign adrenal tumours in the last decades. However, laparoscopic resection is controversial for large, potentially malignant adrenal tumours and necessitates experience in open surgery and advanced laparoscopic surgery (25). (table 1)
CONCLUSION

Adrenal metastasis from CRC via the lung to the adrenal gland is considered to be relatively rare; a hematogenous route is suggested. It is important to consider the possibility of adrenal metastasis in the follow-up of patients who underwent a primary operation for colorectal cancer. Although the prognosis of adrenal metastasis from colorectal cancer is poor, the complete removal of the solitary adrenal metastasis should be done to achieve good prognosis. To detect adrenal metastasis early, radiological modalities such as US, CT and MRI as well as the measurement of serum CEA, should be done regularly.

REFERENCES


<table>
<thead>
<tr>
<th>First authors</th>
<th>Ref</th>
<th>Year</th>
<th>No. of cases of adrenal metastasis</th>
<th>Total no. of cases of colorectal cancer</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glomset8</td>
<td>8</td>
<td>1938</td>
<td>3</td>
<td>63</td>
<td>4.8</td>
</tr>
<tr>
<td>Buirge13</td>
<td>13</td>
<td>1941</td>
<td>8</td>
<td>416</td>
<td>1.9</td>
</tr>
<tr>
<td>Willis9</td>
<td>9</td>
<td>1948</td>
<td>2</td>
<td>65</td>
<td>3.1</td>
</tr>
<tr>
<td>Abrams10</td>
<td>10</td>
<td>1950</td>
<td>17</td>
<td>118</td>
<td>14.4</td>
</tr>
<tr>
<td>Bullock11</td>
<td>11</td>
<td>1953</td>
<td>15</td>
<td>355</td>
<td>4.2</td>
</tr>
<tr>
<td>Mori12</td>
<td>12</td>
<td>1963</td>
<td>4</td>
<td>23</td>
<td>17.4</td>
</tr>
<tr>
<td>Berge14</td>
<td>14</td>
<td>1973</td>
<td>58</td>
<td>517</td>
<td>11.2</td>
</tr>
<tr>
<td>Cedermark15</td>
<td>15</td>
<td>1977</td>
<td>63</td>
<td>450</td>
<td>14</td>
</tr>
</tbody>
</table>

Table 1. Reported incidences of adrenal metastasis from colorectal carcinoma in reviewed autopsy series


