Cytoreductive surgery of giant post-chemotherapy residual retroperitoneal metastasis secondary to testicular tumor

Rosas-Nava JE, Manzanilla-García HA, Pérez-Avila RJ, Almanza-González MS, Virgen-Gutiérrez JF.

ABSTRACT

Management of post-chemotherapy residual mass is surgical. However, due to complications that may present, it has become controversial. Chemotherapy is the initial treatment for stage II and stage III seminoma. The case of a patient with giant post-chemotherapy residual retroperitoneal mass that was managed surgically with no complications and adequate postoperative progress is presented.

Key words: cytoreductive surgery, retroperitoneal metastases, giant residual metastasis, testicular tumor, Mexico.

RESUMEN

El manejo de las masas residuales postquimioterapia es quirúrgico, sin embargo por las complicaciones que se pueden presentar, se ha vuelto controversial. La quimioterapia es el tratamiento inicial para pacientes con estadios II y III de seminoma. Se presenta el caso de un paciente con masa retroperitoneal residual gigante postquimioterapia, la cual se manejó quirúrgicamente sin presentar complicaciones y con adecuada evolución.

Palabras clave: cirugía citorreductiva, metástasis retroperitoneales, metástasis residual gigante, tumor testicular, México.

INTRODUCTION

Surgical management of patients with testicular seminoma and post-chemotherapy residual mass is controversial. Every year 8000 patients present with testicular cancer and 90% are treated with cisplatin-based chemotherapy, retroperitoneal dissection or a combination of both. A smaller number of patients are treated with surveillance. Chemotherapy is the initial treatment for stage II and stage III seminoma.
treatment for stage II and stage III seminoma patients. A limitation of residual mass surgical excision is the technical difficulty due to desmoplastic reaction and therefore this surgery should only be performed by experienced surgeons. Management is fundamental given that 40-50% of patients have teratoma and 10-20% have viable cancer. A 90% survival rate is attained with these procedures. If resection is incomplete risk of death is increased and survival rate is 21%. Patients presenting with masses larger than 3 cm have a 30% incidence of positive histology compared with 0% in masses smaller than 3 cm. Remnants can be detected by means of computed tomography (CT). Mean age is 31 years (17-71 year range), mean size is 8 cm (2-20 cm range) and the most frequent localization is para-aortic. Clinical Stages (CS) were: IIA, 8.6% patients; IIB, 24.75% patients; IICC, 41.9% patients and III, 24.75% patients.

OBJECTIVE
The objective of this report was to present a case of metastatic retroperitoneal mass secondary to testicular tumor, together with evaluation methodology, diagnosis and treatment as well as a literature review.

CLINICAL CASE
The patient is an 18-year-old male with a history of parotiditis at 8 years of age with no complications and right radical orchiectomy in 2006 for testicular tumor. Hydrocele and approximately 200 cc hematocoele of the right testicle were found along with thinning of scrotal skin, necrotic tumor zones and slightly thickened spermatic cord. Patient received chemotherapy in the oncology service and was then asymptomatic. However, control thoracoabdominal computed tomography (CT) revealed retroperitoneal tumor. Patient was operated on and was asymptomatic after surgery. Physical examination revealed a soft, bloated abdomen, no pain upon palpation of both ureteral points and negative costovertebral angle percussion. Mass was palpated to the right of the midline with increased consistency, immobile, and painless. Peristalsis was adequately intense and frequent. Patient had old surgical scar in the right inguinal region. Right testis was absent and genitals were otherwise normal. In relation to tumor markers, alpha-fetoprotein (AFP) prior to orchiectomy was 39720 ng/ml and human chorionic gonadotropin (hCG) was 16,000. Post-orchiectomy, AFP was 6.5 ng/ml, hCG was negative and lactate dehydrogenase (LDH) was 394 U/L. Pathology study reported brownish-gray ovoid testis of intermediate consistency, 1440 gr, 19 x 15 x 9 cm with an uneven and opaque surface. Slice showed yellowish-gray color with 95% necrohemorrhagic tissue and soft, whitish-gray focal areas. Epididymis was grayish-brown, soft, compressed and irregular. It measured 1.5 x 0.9 x 0.6 cm. Microscopic study revealed mixed germ cell tumor with 95% vitelline sac tumor components (endodermic sinuses) and 5% choriocarcinoma extending to the epididymis and internal capsule of the albuginea layer. There was no tumor identification at the surgical border or in the rest of the spermatic cord.

Chest X-ray showed no alterations but abdominal computed axial tomography (CAT) revealed a giant post-chemotherapy retroperitoneal residual mass that displaced and compressed the right kidney and intestinal segments, almost completely occupying the abdominal space (Images 1A and 1B). Cytoreductive surgery was performed on the mass without injuring neighboring organs. Retroperitoneal mass with multiple
cysts and approximately 15 cc of necrotic zones weighing 3,500 gr was extracted (Images 2A and 2B). Pathology report stated metastatic immature teratoma in retroperitoneum. Control tomography showed scarce residual tissue in retroperitoneum (Images 3A and 3B).

**DISCUSSION**

Retroperitoneal lymph node dissection is indicated in patients presenting with persistent serum tumor marker increase and presenting with recurrence. Standard bilateral retroperitoneal lymph node dissection should be performed since a large number of patients present with residual teratoma or viable cancer not within the boundaries of the modified technique. Adjacent organ resection such as in kidney, intestine and large vessels is indicated in an effort to completely rid the patient of disease and is performed in 25% of cases. Nephrectomy is the most common procedure and is performed in 19% of cases (84% of them on the left side) due to para-aortic masses adjacent to the renal hilum, involving the renal vessels, kidney or ureters. In a series of 97 patients presenting with seminomatous elements 25 nephrectomies, 9 inferior vena cava resections, 5 arterial grafts, 5 intestinal resections and 3 biopsies or hepatic resections were carried out.

Postoperative complications presented in 24.7% of cases corresponding to pulmonary complications in 8 cases, chylous ascites in 4 cases, wound infection in 4 cases and death from peritonitis secondary to colon ischemia in 1 case.

Recurrence presented in 22.7% of patients after post-chemotherapy retroperitoneal lymph node dissection with a distribution of 46.7% with stage III, 40% stage IIC and 11.8% in stage IIB. The most frequent recurrence site was the thorax (32.49%) followed by the abdomen (14.22%), supraclavicular lymph nodes (8.13%), brain (5.8%) and other sites (5.8%). Recurrence presented within the first 2 postoperative years.
Follow-up consisted of complete physical examination at each visit, evaluating supraclavicular lymph nodes as well as tumor markers:

- Stage IIA: Chest X-ray and abdominal CAT every 3 years.
- Stages IIB and IIC: Chest X-ray and abdominal CAT every 6 months for 3 years. In the event of neurological or bone manifestations, the corresponding studies were carried out.³

Laparoscopic surgery offers the advantages of shorter hospital stay, less intravenous treatment and a shorter convalescent period. Laparoscopy is used for retroperitoneal lymph node resection in patients presenting with stage I nonseminomatous testicular cancer. Complication rates are 4.4%. Costs for open surgery are slightly less than for laparoscopic surgery.⁶

CONCLUSIONS

Cisplatin-based chemotherapy and post-chemotherapy resection have a 90% healing rate for patients presenting with retroperitoneal mass resulting from testicular cancer. Retroperitoneal residual mass dissection to reduce size is a fundamental treatment component for these patients since 40-50% present with teratoma. Complications and organ injury are frequent but in spite of the very large size of the residual retroperitoneal mass presented in this clinical case there were no complications. The patient is currently asymptomatic. His disease is under control and he continues to be treated with surveillance with reports of 1.6 ng/ml AFP and negative beta hCG.

BIBLIOGRAPHY