Excision of multiple intracranial metastatic hypernephroma

Report of a case with a 7-year survival

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The authors report a case of cerebral and cerebellar metastatic renal carcinoma with 7-year survival without present evidence of recurrence following excision of both intracranial lesions and the primary lesion (by radical nephrectomy).

KEY WORDS □9 multiple metastases □9 regression □9 nephrectomy □9 renal carcinoma

PATIENTS with multiple intracranial metastatic tumors are generally not regarded as surgical candidates. An occasional patient with metastatic renal carcinoma will survive for a long time following nephrectomy. Pulmonary metastases have been known to regress following nephrectomy alone;5,7 this, however, is exceedingly rare. Non-pulmonary lesions have shown regression in two cases reported by Mims, et al.5 In 1973, Holland6 claimed that approximately 60 cases of regression had been reported in the literature up to that time. Our case illustrates a favorable outcome following surgery for multiple intracranial metastases.

Case Report

This 49-year-old man was admitted in February, 1970, after sudden transient loss of consciousness and severe unremitting headache. At the time of admission, he was confused and dysphasic.

First Admission. He exhibited acalculia, diminished sensation over the right lower extremity, right Babinski reflex, and diffuse tenderness in the right upper quadrant of the abdomen, but no abdominal organomegaly or masses. Urinalysis was normal and there was no history of hematuria. Chest and skull x-rays were normal. A 99Tc brain scan showed increased uptake in the left posterior parietal region and cerebral angiography demonstrated a large parietal mass.

On February 11, 1970, a left parietal craniotomy was performed. A massive hematoma involving the left parietal cortex, and subcortex was evacuated. In addition, a hemorrhagic tumor nodule, approximately 2.5 cm in diameter, was completely excised. The tumor was consistent with metastatic
renal carcinoma. A few days following surgery his speech, motor, and sensory functions rapidly returned.

One week postoperatively an intravenous pyelogram and aortogram demonstrated a large right renal tumor measuring approximately 9 cm in diameter. Liver scan, hepatic angiogram, and repeat chest x-rays were negative. On February 23, 1970, a right transabdominal radical nephrectomy for renal carcinoma was performed, and after an uneventful hospital stay, he was discharged.

Second Admission. Four months later, he was readmitted because of suboccipital headaches, dizziness, neck pain described "as someone pushing a hot poker in my neck," nausea, unsteady gait, and blurring of vision. Four-vessel angiogram and brain scan were within normal limits. The chest x-ray and bone scan were also negative. A lumbar puncture yielded normal pressure, cells, and sugar, but an elevated protein of 126 mg%. His headaches were worsened by the Valsalva maneuver. He continued to have a mild inferior quadrantic visual field defect, a few beats of nystagmus toward the right, and impaired tandem walking. He was discharged on Decadron (dexamethasone) and Diamox (acetazolamide).

Third Admission. He was again admitted on June 28, 1970. At this time a positive contrast ventriculogram was performed showing deviation of the fourth ventricle from right to left and enlargement of both lateral ventricles. On July 2, 1970, a posterior fossa exploration yielded a 3-cm well circumscribed right cerebellar metastatic tumor which was completely excised. This tumor was also consistent with metastatic renal carcinoma. No chemotherapy or radiation therapy was administered.

He has since had no subjective evidence of tumor recurrence and a recent brain scan and chest x-ray were both normal. He continues to function well in his previous occupation 7 years postoperatively, and has no cerebral or cerebellar deficits.

Discussion

The annual incidence of renal cell carcinoma is approximately 3.5/100,000 population. It is well recognized that renal carcinoma may escape detection for long periods of time and that often the presenting feature may be related to metastatic disease and not infrequently to intracranial metastasis. Of 240 patients reviewed by Steyn and Morales, 66% presented with urological symptoms, 22% with non-urological symptoms, and 7% with symptoms due to metastatic disease. Raskind, et al., in reporting on 51 patients with single intracranial metastatic lesions treated by craniotomy, mentioned only two patients with renal carcinoma; their length of survival was only 1 year.

In spite of radical nephrectomy, the percentage of patients who achieve a 5-year survival remains at approximately 35% to 40% for all stages of tumor. Of the 309 patients reported by Skinner, et al., 77 patients had Stage IV renal tumor, that is, distant metastases and involvement of adjacent visceral structures; 8% of these patients survived for 5 years, and 7% for 10 years. One patient in this latter group showed regression of pulmonary nodules presumably thought to be metastatic from the kidney. Surgery appears to provide the best chance to date for the treatment of metastatic renal carcinoma.

Radiotherapy and chemotherapy do not provide an improved prognosis. Surgical treatment of cerebral metastatic disease can be disappointing but renal carcinoma may at times yield gratifying results. Whether this case can be regarded as regression of microscopic metastases is open to question. The initial prolonged "silence" of the tumor's primary site is not at all uncommon in renal carcinoma. Takáts and Csapó reported an unusual case of a patient who had an abdominal mass first discovered in 1917; it was biopsied in 1927 and found to be renal carcinoma, but was then thought to be inoperable; the patient finally died in 1964 of multiple metastases.

Lucks has shown that certain renal carcinomas may be induced in laboratory animals, specifically the leopard frog (Rana Pipiens), by viruses. If human renal carcinoma is of viral origin, certain types of regression could be explained on an immunological basis.

By the time patients with renal carcinoma are referred for neurosurgical care they often have widespread metastases with intracranial and/or intraspinal involvement — usually multiple. Very little can be done for them at this stage and the prognosis is generally poor. However, in view of the fact that the occasional patient will do as well as
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in our case, a more aggressive approach should be encouraged. To our knowledge, this is the first long-term survival reported in the literature of a patient following excision of multiple intracranial metastases of renal carcinoma.

References


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