SPONTANEOUS REGRESSION OF A HYPERNEPHROMA

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Spontaneous regression of malignant tumours, wherein healing is complete or includes the larger part of a tumour, is very rare. Bashford estimated that it occurs but once in one hundred thousand cases. The case which came to our attention was a large tumour of the kidney that had undergone necrosis and calcification.

Fig. 1. Calcium Tumour of the Kidney

The patient was a woman of sixty-one years, whose symptoms were related to the gastro-intestinal tract. A large, fixed mass was palpable in the left upper abdomen; no pain nor tenderness was elicited. X-ray examination disclosed a retroperitoneal, calcareous, cystic mass in the left upper abdominal quadrant, displacing the spleen upward, forward, and laterally, with the stomach overlying it anteriorly. In the stomach, a large indentation was seen on the greater curvature, apparently resulting from the pressure of the mass. Pyelography showed the left kidney displaced downward, and it was thought that the mass could be visualized as lying above and behind the displaced kidney. The upper calices were dilated, and distorted, apparently by the pressure of this mass. The right kidney pelvis and calices were normal. Both kidneys were functioning normally.
and the urine contained no cells. The greater part of the mass, as seen by x-ray, was spherical in shape, with, however, a knob-like process the size of a small orange projecting from its lower extremity. The dimensions of the shadow were $8\frac{1}{2}'' \times 5\frac{1}{2}''$. The origin of the tumour was not definitely determined, although it was thought not to be a primary tumour of the kidney.

An exploratory operation was done by Dr. Roscoe R. Graham, and a large retroperitoneal tumour was found, arising in the upper pole of the left kidney. It was readily removed en masse with the kidney. The patient made an uneventful postoperative recovery. No metastatic growths were discovered at operation nor on x-ray examination.

The gross specimen was a large, globular tumour growth measuring 13 cm. in diameter, involving the upper half of the kidney. It was enclosed within a smooth capsule which was continuous with that of the kidney, and was stony hard in consistency, requiring a saw to cut it. The entire mass was calcified, except for one small piece of soft tissue about the size of a marble found after careful search for material suitable for section. The cut surface presented a picture resembling a hypernephroma. The colour

![Fig. 2. Groups of Nephroma Cells Arranged about a Capillary](image)

was yellowish and greyish-white, mottled with patches and streaks of golden brown pigment. Many large and small cystic spaces were present, and the center of the mass was occupied by a large, smooth-walled cavity 7 cm. in diameter. These cysts contained soft, greyish-yellow, jelly-like material. There were, however, none of the haemorrhagic areas commonly seen in hypernephroma. The growth was sharply demarcated from the kidney by a continuation of its capsule, and there was no invasion of the remaining portion of the kidney. Distortion of the upper calices and pelvis was quite marked, and the wall of one of the calices was partly formed by the capsule of the tumour, but was not eroded.

Decalcified blocks of the tumour were entirely devoid of cellular structure. The material was of a dense homogeneous hyaline nature which took a light eosin stain. In this were deposited large, irregular sheets of calcium. The arrangement of these structures did not suggest any pre-existing cellular architecture. Bone formation was not evident. Sections of the soft tissue, however, showed small nests of cells lying singly or in groups, with much necrotic tissue intervening. The groups of tumour cells were arranged about small, thin-walled blood vessels. Individual cells were very large, irregular in outline, and pale staining. The nuclei were small, round, deeply stained, and eccentrically placed, and in the cytoplasm were many large and small vacuoles. No tumour cells could be found lying within blood vessels. The cells which had survived to this stage were now showing definite degenerative changes.
From the gross appearance of the tumour and its location in the kidney we considered it to be a calcified hypernephroma. The discovery of the small groups of typical nephroma cells definitely decided the diagnosis. Sections from the remaining portion of the kidney showed no evidence of tumour invasion. A small atrophic left adrenal gland was removed at operation, which was not involved in the tumour.

Hall, in reporting a series of hypernephromata, recorded one tumour which was separated from the kidney substance and fell out of its capsule. From his microscopic examination the shadowy, poorly staining tumour cells suggested that the tumour was dead on removal. Rohdenburg collected 302 reported cases of spontaneous recession of malignant tumours, including carcinoma, sarcoma, chorionepithelioma, endothelioma, and hypernephroma. Of the various factors responsible for spontaneous absorption, the list is headed by partial surgical removal of the tumour and this is followed by acute febrile processes. Next are general metabolic alterations, such as cachexia and nutritional deficiencies. Local causes, as fibrosis, hemorrhage, and loss of blood supply by thrombosis or constriction are given their places. Of the types of degeneration, Rohdenburg notes that necrosis followed by calcification is the one most frequently associated with spontaneous absorption. Ewing also notes hyalinosis of tissue, hyaline degeneration of vessels within the tumour, mucous degeneration of stroma and parenchyma, inflammation in or about the tumour, and calcification of parenchyma and capsule.

This case is an instance of almost complete regression of a malignant tumour. Our first impression was that of a complete regression, but the finding of a small piece of viable tumour indicates that growth was not entirely abolished. The process by which regression was instituted in this case is not clear. Total thrombosis or infarction of the tumour is ruled out by the existence of capillary blood spaces containing normal blood within the remnants of tumour tissue. No obvious systemic or metabolic conditions occurred which might be related to the process of healing. It is only possible to suggest that some complex form of local or general immunity developed, which established retrogressive changes in the tumour.

References