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CT Diagnosis of Spontaneous Subcapsular Hematoma Secondary to Hypernephroma: Report of a Case

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腎癌に伴った Spontaneous Subcapsular Hematoma の 1 例

—CT による診断—

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Renal subcapsular hematoma および perirenal hematoma は、しばしば外傷後に認められる。しかしながら spontaneous subcapsular hematoma はまれであり、この原因としては、腎炎、腫瘍または結節性(多発性)動脈周囲炎などの血管病変等が報告されている。

我々は、今回、腎癌に伴った spontaneous subcapsular hematoma を経験したので報告する。CT は、血腫の診断のみならず、血腫の原因となった腫瘍の存在診断にも有効であった。さらに、そ

の診断に際して、(1) spontaneous subcapsular hematoma の原因として、腫瘍によるものがかなりある(12—16%)ことを銘記しておくこと。(2) 血腫内に認められる腎の辺縁に不整がある場合には、その原因として腎癌の存在を疑うこと、以上の2点が重要と思われた。

CT により、術前に腎癌の存在を疑うことで術中に悪性細胞撒布の危険性を減じうることを強調したい。

Introduction

Renal subcapsular, or perirenal, hematomas are usually posttraumatic. Spontaneous subcapsular hematomas are rare, and they may be secondary to nephritis, neoplasms, or vascular lesions such as periarteritis nodosa. This is a report of the CT findings in a case of spontaneous subcapsular hematoma. Computed tomography afforded a diagnosis of this entity, with a suspicion of a coexisting neoplasm.

Case Report

A 33 year-old female was admitted to the Tagawa Municipal Hospital on December 30, 1980, with a

three day history of sharp right upper quadrant pain radiating to the right flank. There was no evidence of recent trauma.

Computed tomography (CT) without contrast material on January 12, 1981, demonstrated an enlarged right kidney, with a crescentic mass of increased attenuation along its lateral margin (Fig. 1) which compressed the renal parenchyma. The mass was considered to be a fresh perirenal or subcapsular hematoma.

On January 27, 1981, she was referred to Kyushu University Hospital for surgery. Physical examination on admission revealed a blood pressure of 120/60 and an oral temperature of 37.4°C. There was right

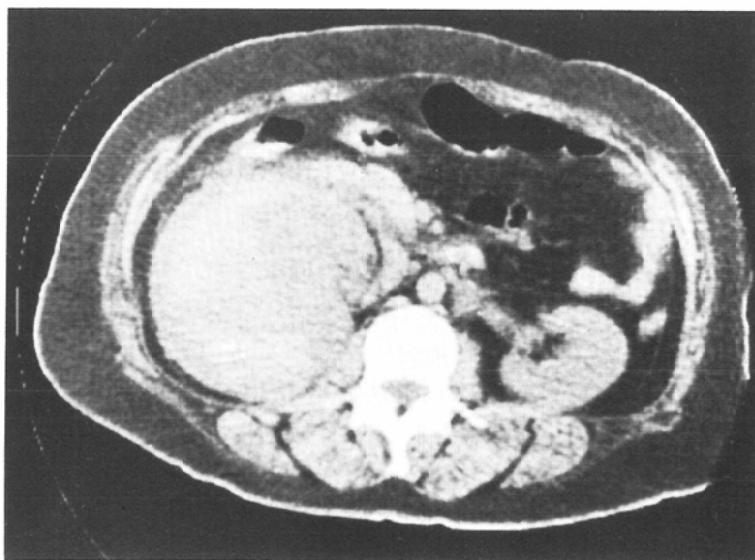


Fig. 1 The right kidney is enlarged, with a crescent zone of increased attenuation along its lateral margin.

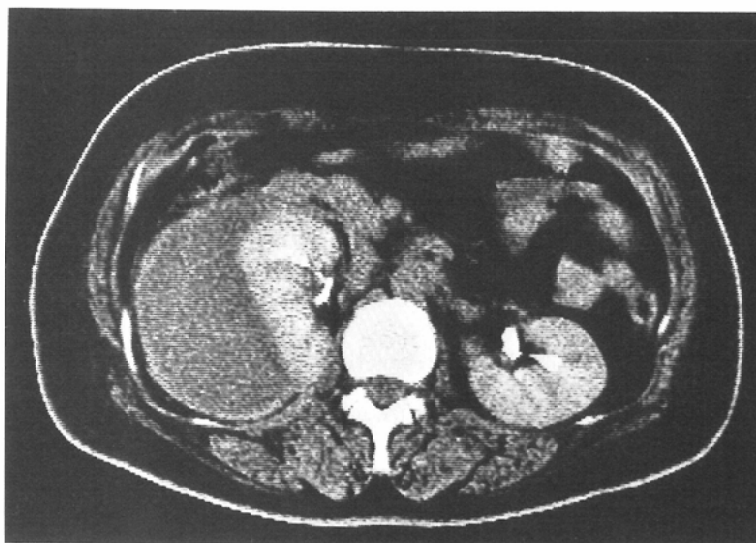


Fig. 2 A low density mass (28 HU) is found in the same area as the crescent zone in Fig. 1, consistent with subcapsular or perirenal hematoma.

upper quadrant tenderness, and hard abdominal mass palpable in the right side of the abdomen. Urinalysis revealed hematuria, but no proteinuria or glucosuria. The blood urea nitrogen was 8mg/dl and the serum creatinine, 0.8mg/dl.

On January 30, she was reexamined using CT with contrast infusion. A low density mass was again found in the right perirenal area, consistent with a subcapsular or perirenal hematoma (Fig. 2). In addition, an irregular low density area was seen in the mid posterior aspect of the right kidney, suggesting a neoplasm (Fig. 3).

Exploration on February 13 was via a right flank approach. The kidney was difficult to mobilize because of its adherence to the peritoneum. There was a hematoma beneath the renal capsule, and when the latter was incised, old gelatinous blood effused. A hard $3 \times 2.5 \times 2.5$ cm mass was found in the mid posterior margin of the kidney. A right nephrectomy was performed, and histological study revealed adenocarcinoma.

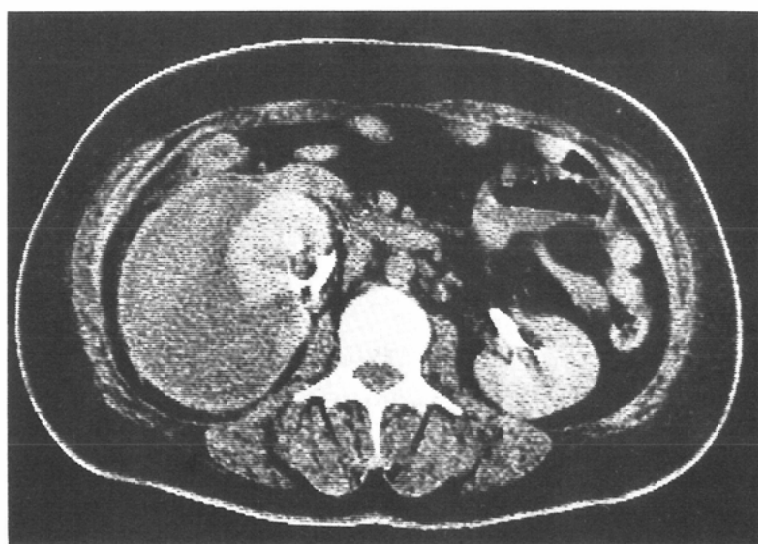


Fig. 3 30mm lower slice from Fig. 2. An irregular low density area is seen in the mid posterior aspect of the right kidney.

Discussion

In Polkey and Vynalek's¹⁾ analyses of 178 cases of spontaneous non-traumatic perirenal and renal hematomas, the most common etiologies were nephritis (30 cases), tumors (22 cases) and renal arterial aneurysms (20 cases). In Novicki and Turligton's²⁾ analyses of 194 cases of spontaneous perirenal hemorrhage, the etiologies were tumors in 32(16%), nephritis in 30(15%), spontaneous in 30(15%), infection in 23(12%), renal arterial aneurysms in 20(10%), and atherosclerosis in 12(6%).

Both reports cited tumors as one of the most important causes of spontaneous non-traumatic subcapsular or perirenal hemorrhages. Tumors which may present in this fashion were reportedly hypernephromas³⁾ and angioliipoma⁴⁾.

CT is useful for diagnosing benign cysts, hydronephrosis, atrophy, cortical scarring, and it provides reliable evidence of tumors⁵⁾⁻⁹⁾.

The computed tomographic findings of renal hematomas as summarized by Schaner and Balow¹⁰⁾ include: 1) renal enlargement associated with poor function, 2) a thickened ring confining a subcapsular hematoma, 3) a decrease in the CT number within 5 days of the bleeding episode.

The present case satisfied all three of these conditions, allowing us to diagnose it as a subcapsular hematoma with a coexisting renal neoplasm.

A diagnosis of subcapsular hematoma due to a renal neoplasm carries with it very important clinical significance for decision making concerning therapy. CT provides a rapid noninvasive means of evaluating patients with subcapsular hematomas and renal neoplasms, CT should be the diagnostic method of choice in suspected cases of subcapsular hematoma.

Renal neoplasms are common causes of renal subcapsular hematomas. When a renal irregularity is visualized by CT, a subcapsular hematoma should be considered with the possibility of a coexisting renal cell carcinoma. Otherwise, tumor cells in the perirenal space may be disseminated during surgery.

Conclusion

A case of spontaneous subcapsular hematoma with a coexisting hypernephroma is presented. The keys to diagnosing a renal neoplasm and renal hematoma are: 1) the high frequency of coexisting renal neoplasms as causes of spontaneous nontraumatic subcapsular hematomas, and 2) the demonstration of an irregular renal contour or a solid mass in the kidney by CT examination with the injection of contrast material intravenously.

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