Renal Carbuncle

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ABSTRACT

A case of renal carbuncle was diagnosed with ultrasonography and computed tomography. The case was successfully treated with surgical open drainage.

Renal carbuncle was first described by Israel in 1891 as a multilocular, communicating abscess of the kidney cortex, spread from a focus of infection in another part of the body [1]. This relatively rare disease may present diagnostic and therapeutic problems. We are presenting a case which was successfully treated by antibiotics and surgical open drainage.

THE CASE

MEB a 15-year-old male patient was admitted with fever, right loin pain and haematuria. Four weeks before, he had received treatment for upper respiratory tract infection and after an initial improvement, 2 weeks later, he had started to have fever and right loin pain. He was looking toxic with a temperature of 39.5 °C, pulse 100/min and BP 110/70. The right loin was tender and felt full. He was anaemic, had leuckocytosis and staphylococcal aureus grew from the urine. IVU (Fig 1) showed slight distortion and narrowing of the upper calyces. Ultrasonography showed an irregular hyperechoic area at the postero-inferior aspect of the right hepatic lobe extending to the upper pole of the right kidney. A provisional diagnosis of liver abscess was made. However by CT Scan (Fig 2) the upper pole of the right kidney was found to be thickened and not homogenous. A few small lucent areas were also seen in the area around the kidney and the liver was normal.

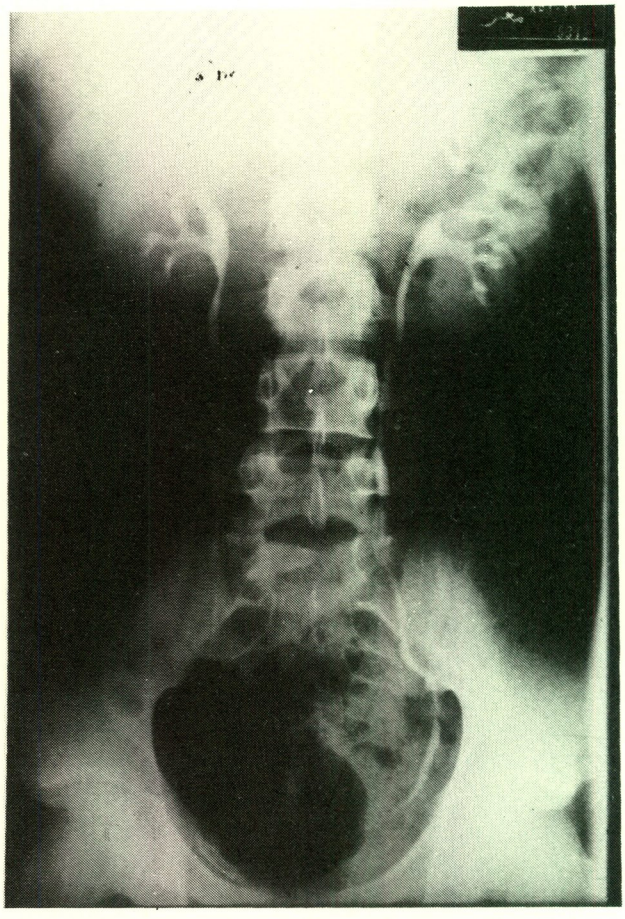

Fig 1 a. IVU showing functioning kidneys with some narrowing and distortion of upper calyces of right kidney.

Under antibiotics cover, the right kidney was explored through a loin subçostal incision. The lower pole found to be normal while the upper pole was indurated and adherent to the surrounding. During dissection an abscess cavity was entered. It

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Fig 1 b. IVU, oblique view of right kidney, showing the changes in the calyces.

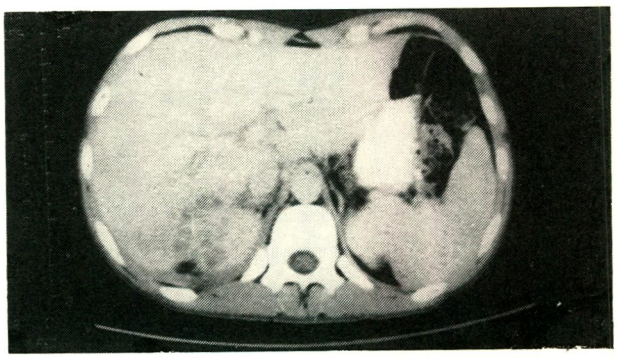

Fig 2 a. CT scan cut, showing the non-homogenous upper pole of the right kidney. The multiple lucent areas indicating the abscess, also seen.

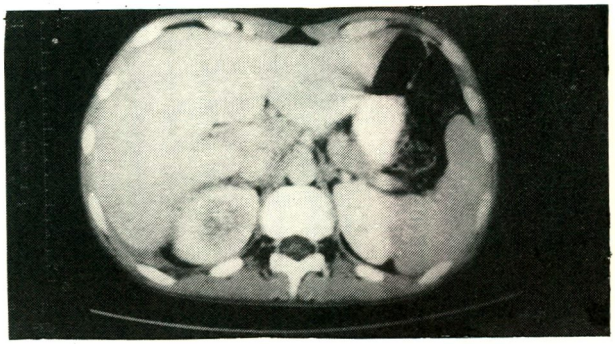

Fig 2 b. A lower CT scan cut showing the thickened upper pole of the right kidney and non-homogenous pattern.

contained about 30 cc of thick yellowish pus, a culture from it grew staphylococcal aureus. After drainage and cleaning, biopsy taken from the surface of the kidney showed non-specific inflammation. The area drained by closed system and antibiotics continued post-operatively according to the senitivity results. Post-operative period was complicated by wound infection which was controlled by wound drainage and later resuturing. When he was discharged from the hospital two weeks later, he had no complaint, no fever and the wound was clean.

He continued to do well for over a year follow-up, and check by ultrasonography and IVU showed previously affected area had healed and renal parenchyma and function recovered.

DISCUSSION

Although in some series, it was stated that today, renal carbuncle (renal cortical abscess) is no longer a staphylococcal disease but more often one that complicates a previous urologic abnormality and is due to common urologic microorganisms [2, 3]. In our patient it apparently followed the recent upper respiratory tract infection. The presence of haematuria and positive urine culture with an organism similar to those grew from the abscess, indicate that there was a breakage of the calyceal lining epithelium.

Ultrasonography and computed tomography are an attractive alternatives to serial IVU examinations for the diagnosis and follow-up [3, 4]. So far the treatment modalities in this condition consist of either closed percutaneous or surgical open drainage under antibiotics cover or nephrectomy. While the possibility of nephrectomy is dramatically reduced nowadays, there is an increasing trend of closed percutaneous drainage under ultrasound or CT scan guidance [3, 4]. Nevertheless there are still some advocates of the surgical open drainage since they reported a lower incidence of failures and subsequent nephrectomies [5]. The last approach was successful in our patient. One of the reasons of failure in closed percutaneous drainage is probably the presence of multilocular abscess.

CONCLUSION

Ultrasonography and computed tomography are excellent diagnostic procedure for the diagnosis and follow-up of renal carbuncle.

REFERENCES

1. Ingrish GA. Carbuncle of the kidney : report of ten cases. J Urol 1939;42:326.

2. Malgieri JJ, Kursh ED, Persky L. The changing clinico-pathological pattern of abscesses in or adjacent to the kidney. J Urol 1977;118:230.

3. Costello AJ, Blandy JP, Hately W. Percutaneous aspiration of renal cortical abscess. Urology 1983;2(11):201–04.

4. Gerzof SG, Gale ME. Computed Tomography and Ultrasonography for diagnosis and treatment of renal and retroperitoneal abscesses. Urol Clin North Am 1982; 9(1):185–93.

5. Fernandez JA, Miles BJ, Buck AS, Gibbons RP. Renal Carbuncle: comparison between surgical open drainage and closed percutaneous drainage. Urology 1985;2(15):142-44.