

Isolated unilateral renal mucormycosis in a young immunocompetent male

Kalpesh Mahesh Parmar , Shiraj Akif, Santosh Kumar, Pawan Kaundal

Department of Urology, Post Graduate Institute of Medical Education and Research, Chandigarh, India

Correspondence to

Dr Kalpesh Mahesh Parmar; kalpesh010385@gmail.com

Accepted 29 August 2021

DESCRIPTION

A 32-year-old, non-diabetic, non-hypertensive immunocompetent male presented with fever and acute abdominal pain of 2 days duration. He was a labourer by occupation and his medical and family history are insignificant. On clinical suspicion of acute appendicitis, patient underwent appendicectomy in a private healthcare centre. The referral notes reported that the appendix and intestinal bowel loops were normal and there was minimal free fluid in the pelvis. The following day, patient had abdominal distension, tenderness and guarding for which he was referred to a higher centre. With a high suspicion of perforation peritonitis, patient was re-explored through a midline laparotomy incision. However, there was no evidence of bowel perforation. Laparotomy wound was closed and patient was referred to our centre. On examination, patient was conscious, febrile and poorly built with body mass index of 18 kg/m². His blood pressure was 86/54 mm Hg and a pulse rate of 140/min. On systemic examination, abdomen was distended, tender and right flank region showed severely inflamed skin with features of cellulitis. His haemoglobin was 85 g/L, total leucocyte count was 65 × 10⁹/L cmm, serum creatinine was 1.6 mg/dL and serum albumin was 1.9 gm/dL. His urine output was 50 mL/hour and after initial resuscitation with intravenous saline, his blood pressure came up to 104/62 mm Hg. A contrast-enhanced CT of the abdomen was done, which showed enlarged right kidney with multiple non-enhancing hypodense lesions and marked perinephric fat stranding (*figure 1*). Ultrasound-guided renal biopsy showed atypical septate hyphae suggestive of mucormycosis. Patient was started on intravenous liposomal amphotericin B at a dose of 5 mg/kg and planned for right nephrectomy. On surgical exploration, dense adhesions were present in perinephric region extending laterally into muscles and subcutaneous space (*figure 2*). Diffuse oozing from

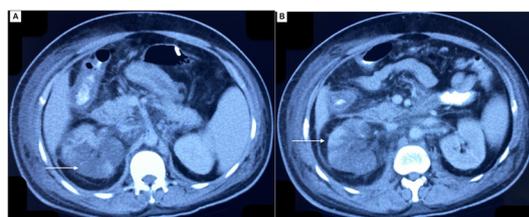


Figure 1 (A,B) Contrast-enhanced CT of the abdomen (axial sections) showing globular enlarged kidney with multiple hypodense lesions in right kidney with perinephric stranding.



Figure 2 Intraoperative image showing dense adhesions of right kidney with adjacent organs and marked necrosed fatty tissue in perinephric region.



Figure 3 (A,B) Gross and cut specimen of right nephrectomy showing multiple areas of necrosed fatty tissue on the surface of kidney with areas of haemorrhagic necrosis and patchy normal renal parenchyma.

perinephric multiple small vessels was present. The colon and duodenum were carefully mobilised, control of renal hilum taken and specimen was successfully retrieved. Cut specimen showed large areas of perinephric necrosed tissue with patches of haemorrhagic necrosis and intervening normal parenchyma (*figure 3A and B*). In the postoperative period, patient received intravenous nutritional supplements. Right flank skin and subcutaneous tissue developed necrotising fasciitis for which debridement was done. In view of ongoing sepsis and multiorgan dysfunction, patient succumbed on day 7 after surgery.

The diagnosis and treatment of renal mucormycosis is challenging due to its rarity and clinical



© BMJ Publishing Group Limited 2021. No commercial re-use. See rights and permissions. Published by BMJ.

To cite: Parmar KM, Akif S, Kumar S, et al. *BMJ Case Rep* 2021;**14**:e245309. doi:10.1136/bcr-2021-245309

Images in...

unfamiliarity. It carries high morbidity and mortality owing to its invasive nature.^{1,2} It is most commonly witnessed in immunocompromised patients such as diabetes mellitus, chronic kidney disease, patients undergoing cancer chemotherapy or corticosteroid therapy. CT with its characteristic features aided with histology confirms the diagnosis.³ Treatment of mucormycosis

in general involves a combination of surgical debridement of involved tissues and systemic antifungal therapy.⁴

Patient's perspective (written by patient's brother)

Patients brother—We are thankful to the hospital staff and complete team of doctors for taking good care of our patient and counselling during hospital stay.

Learning points

- ▶ Isolated unilateral renal mucormycosis in an immunocompetent male is becoming common recently.
- ▶ CT imaging with classical features is key to diagnosis.
- ▶ Prompt diagnosis and treatment is essential for better outcomes.

Contributors SA and KMP—concept, design, data collection and initial draft. PK—images editing. SK—critical comments.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Consent obtained from next of kin.

Provenance and peer review Not commissioned; externally peer reviewed.

ORCID iD

Kalpesh Mahesh Parmar <http://orcid.org/0000-0003-3891-4089>

REFERENCES

- 1 Jeong W, Keighley C, Wolfe R, *et al*. The epidemiology and clinical manifestations of mucormycosis: a systematic review and meta-analysis of case reports. *Clin Microbiol Infect* 2019;25:26–34.
- 2 Prakash H, Chakrabarti A. Global epidemiology of mucormycosis. *J Fungi* 2019;5:26.
- 3 Bhadauria D, Etta P, Chelappan A, *et al*. Isolated bilateral renal mucormycosis in apparently immunocompetent patients—a case series from India and review of the literature. *Clin Kidney J* 2018;11:769–76.
- 4 Farmakiotis D, Kontoyiannis DP. Mucormycoses. *Infect Dis Clin North Am* 2016;30:143–63.

Copyright 2021 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <https://www.bmj.com/company/products-services/rights-and-licensing/permissions/>
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

Customer Service

If you have any further queries about your subscription, please contact our customer services team on +44 (0) 207111 1105 or via email at support@bmj.com.

Visit casereports.bmj.com for more articles like this and to become a Fellow