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Case Report

Giant Hydronephrosis Commencing Large Bowel Obstruction

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Abstract

For this study, a case of large bowel obstruction in a 50 year old male was studied. It was observed that the large bowel obstruction was caused on an account of a large hydronephrotic non-functioning kidney on contrast-enhanced computed tomography. Due to the non-functioning kidney on Tc Technetium diethylene-triamine-pentaacetate, the patient underwent a laparoscopic left nephrectomy subsequently, which alleviated the massive abdominal distension and symptoms of large bowel obstruction. The study reviews the course of disease progression, imaging finding, and discuss the manner of such a unique and rare presentation.

Key words: Case report, Contrast-enhanced computed tomography, Hydronephrosis, Large bowel obstruction, Ureteric calculus

INTRODUCTION

Giant hydronephrosis[1] is defined as that which occupies a hemiabdomen, which meets or crosses the midline and which is at least five vertebrae in length.

With the prevalent use of ultrasonography, most of the hydronephrotic cases are diagnosed much earlier before it is large enough to produce a visible swelling.[2] Rarely hydronephrosis presents as an intra-abdominal mass mimicking a subacute intestinal obstruction.

We report a rare case of a left giant hydronephrotic kidney due to chronic obstructive uropathy in an adult male patient aged 50 years, who clinically presented with features of bowel obstruction.

CASE REPORT

A 50-year-old male patient with an 11 day history of abdominal pain, distension and constipation presented to the emergency department with no urological complaints. There was no history of abdominal trauma, fever, and weight loss. No similar symptoms of abdominal distention in the past and no history of the previous abdominal surgery were there.

Abdominal examination: The abdomen was observed to be grossly distended and tender. A large tensely cystic mass was noticeable in the left hemiabdomen. The bowel sounds were exaggerated. Examination of the other systems was unremarkable.

Abdominal antero-posterior erect and supine radiograph suggested large bowel obstruction. The contrast-enhanced computed tomography of the abdomen suggested a large hydronephrotic left kidney due to chronic obstructive uropathy, with thinned out renal parenchyma. The hydronephrotic sac was causing external luminal compression on left-sided colon, leading to narrowing, and upstream dilatation of colon. There was no thickening or enhancement of mucosa. Technetium diethylene-triamine-pentaacetate (Tc DTPA) scan was done, which suggested nonfunctioning left kidney. Since the patient had nonfunctioning kidney on Tc DTPA, the patient subsequently underwent an uneventful laparoscopic left nephrectomy.

On follow-up antero-posterior X-ray, resolution of large bowel obstruction was noted with clinical improvement. Patient was subsequently discharged after 4 days [Figures 1-3].

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DISCUSSION

Although, a large hydronephrosis has been observed to present with sepsis, flank pain, fever, hematuria, and hypertension;[3-5] intestinal obstruction is an exceptional and largely unreported. For this case, we were bemused to find a massively enlarged hydronephrotic kidney with a grossly distended pelvis, compressing the descending colon causing mechanical large bowel obstruction.

In addition, this case also highlights how ureteric calculus can present with no prior observed history of urinary tract infections. Due to a giant hydronephrosis with thinning of parenchyma, it's clear that the calculus in question had been present for a long time. The patient remained asymptomatic throughout the process even though the hydronephrosis keep on increasing and started causing compression over descending colon and mild inflammation to the surrounding fat. Patient finally presented with a compression over descending colon; occluding the bowel lumen causing acute large bowel obstruction.

It is common for the large bowel to infrequently become obstructed by external compression by adjacent masses commonly including pancreatitis, endometriosis, lymphadenopathy, mesenteric or colonic surface involvement of peritoneal carcinomatosis, intra-abdominal abscesses, and direct invasion from gynecologic or prostatic malignancies.[6] Very few cases have been reported where the external cause for compression was hydronephrosis. Contrast-enhanced computed tomography (CECT) is investigation of choice in bowel obstruction, in our case, CECT scan had done a remarkable job in making accurate diagnosis and guiding the further management plan. As delay in diagnosis of the large bowel obstruction can lead to ischemia and perforation, timely diagnosis of cause of large bowel obstruction is necessary.

On diagnosis, giant hydronephrosis must be treated to prevent life-threatening urosepsis or end-stage renal failure. The presence of giant hydronephrosis can lead to several complications.[7] Complications such as hematuria, hypertension, pyonephrosis, and traumatic perforation have been observed in chronic hydronephrosis.

Treatment of such cases of hydronephrosis is dependent on the functional status of underlying etiology and kidneys.[8] Procedure of choice for non-functioning kidneys is nephrectomy and pyeloplasty is the surgical management of ureteropelvic junction obstruction with good differential function. Our patient underwent laparoscopic nephrectomy. Post-operative period was unremarkable, symptoms relieved, and patient got discharged in stable condition.

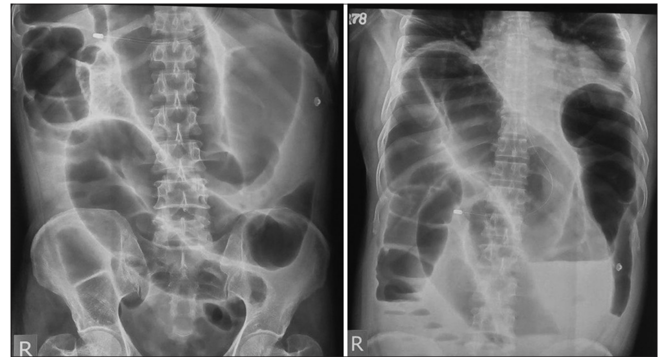

Figure 1: Abdominal antero-posterior supine and erect radiographs shows dilated large bowel loops with few air fluid levels, suggestive of large bowel obstruction

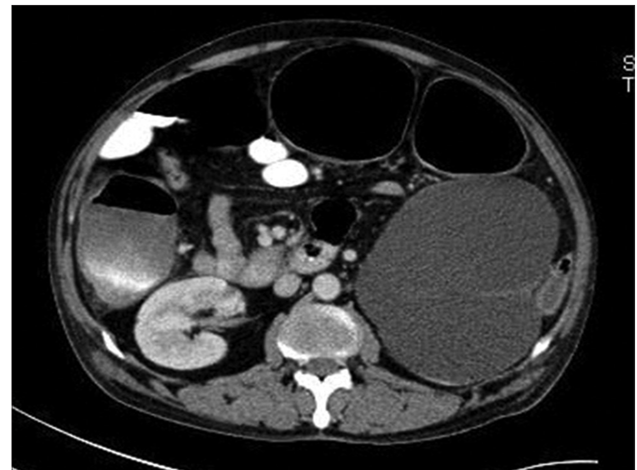

Figure 2: Axial section of Contrast-Enhanced Computed Tomography abdomen shows gross hydronephrosis of the left kidney with thinning of renal parenchyma

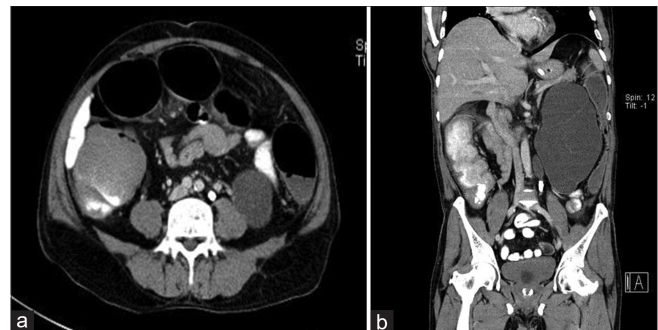

Figure 3: (a and b) Axial and coronal reconstruction of contrast-enhanced computed tomography abdomen shows a calculus in the left upper ureter causing gross hydronephrosis of the left kidney

TEACHING POINT

Gross hydronephrosis is an infrequent cause of large bowel obstruction. Recognition of the typical imaging findings of hydronephrosis causing large bowel obstruction is important to make an accurate and timely diagnosis and to assist in patient management.

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