



Case report

Visual impression of the colon over giant hydronephrosis in a child: A case report

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ABSTRACT

Introduction: Giant hydronephrosis is a rare manifestation of upper urinary tract obstruction. On clinical examination, a colonic band of resonance is appreciated on percussion due to presence of transverse colon anterior to the renal lump. However, visualizing the colon on inspection is not reported in the literature.

Presentation of case: A 13-year-old girl presented with abdomen distension for a duration of two years. On clinical examination, the abdomen was grossly distended, with left side of abdomen more prominent. On inspection, the colonic impression was visualized. There was large cystic lump, above which, the colonic impression was observed. With percussion we could elicit the colonic band of resonance as well. Imaging and radionuclide scan revealed giant hydronephrosis of left kidney with poor function. Patient underwent a laparoscopic nephrectomy. Patient was discharged after 3 days.

Conclusion: Giant hydronephrosis can present as gross abdomen distension. The presence of colon anterior to the renal lump can be appreciated by inspection during the clinical examination.

1. Introduction

Giant hydronephrosis is termed when the size of the dilated kidney exceed a volume of 1000 cc (adults), or the volume equivalent of one day's urine output or 2–4% body weight (in children) [1,2]. Though a rare presentation, giant hydronephrosis is not an uncommon manifestation of long-standing upper urinary tract obstruction. Due to its retroperitoneal location, whenever there is an enlargement of the kidney or its adjacent structures, it tends to push the peritoneal content forward and medially. This is more apparent on clinical examination when one elicits the 'colonic band of resonance', where a gas-filled transverse colon lying over a retroperitoneal lump gives a tympanic note on percussion. The colonic impression over such a lump is rarely visualized on inspection during a clinical examination. This clinical finding helped us narrow our differential diagnoses. Such a finding was not published before in the literature. The following case report is presented as per standard guidelines [3].

2. Case report

A 13-year-old girl presented to our outpatient department with a complaint of abdomen distension and discomfort for the last 2 years. The

patient noticed progressive distension of the abdomen, more on the left side. She never experienced pain or any other urinary or gastrointestinal disturbances. Her drug history, family history and social history were significant. On clinical examination, the abdomen was grossly and asymmetrically distended, with distension more prominent in the left of the abdomen. On careful observation, the colonic impression was visualized over the abdomen (Fig. 1). On further examination, the distension was caused by a non-tender, large round lump that was cystic consistency. Percussion over the colon elicited a tympanic note, while on the lump it was a dull note. This narrowed our differential diagnoses to a cystic lesion arising from retroperitoneum. Ultrasound study of the abdomen revealed a giant cystic structure in the left renal fossa and a normal right kidney and bladder. The left kidney was not separately visualized. A computed tomography scan showed giant hydronephrosis of the left kidney, with the pelvis measuring 14 × 14 × 22 cms. The renal parenchyma was completely thinned out. The picture on imaging was accurately correlating with the clinical examination findings (Fig. 2). Since she did not have any gastrointestinal symptoms, there was no reason to evaluate other causes of colon dilatation. A diuretic renogram using LLEC (L, L- Ethylene dicysteine) revealed poorly functioning kidney (split function 3.3%) and normal right kidney (split function: 96.7%, and estimated GFR 163 mL/min). The findings were suggestive of

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Fig. 1. The impression of the colon (marked in black outline) and the giant hydronephrosis (faintly shaded with blue lines). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

pelviureteric junction obstruction in the left kidney. The patient underwent a laparoscopic left nephrectomy. The operation was performed by senior consultant (Dr AJ) with experience of more than 7 years in laparoscopic surgeries in our tertiary centre. Histology examination showed a flattened, dilated pelvicalyceal system, with attenuated urothelium. The post-operative period was uneventful, there was no colonic distension, and she was discharged after 3 days. The patient was followed up for over 6 months. She has relief from all her symptoms now.

3. Discussion

With the increased availability of ultrasound, hydronephrosis is detected quite early in even antenatal period. Rarely, chronic hydronephrosis presents as giant tumors or gross abdominal distension mimicking ascites. Appreciating the colonic band of resonance is common while examining a renal lump. The mechanism behind this clinical sign is obvious, where a gas-filled colon lies over the dull renal lump and a tympanic note is elicited. However, it is rarely visualized on inspection. In this case, the same sign could be elicited from the transverse, descending and sigmoid colon. We did a literature search for such a phenomenon but couldn't come across any.

In our case, the patient did not have any colonic obstruction from the giant hydronephrosis. Probably the consistency of the giant hydro-nephrotic kidney did not cause any pressure effect on the colon. Since the body habitus of the patient was thin, the colonic impression could be well appreciated.

4. Conclusion

Giant hydronephrosis due to pelviureteric junction obstruction can present with gross abdomen distension. Rarely, during the clinical examination, the presence of the colon over a renal lump can be appreciated on inspection also. In the modern age of imaging, clinical examination skills are often neglected. With this case report, we intend to reiterate the importance of the clinical examination.

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Consent

A written informed consent has been obtained from the patient and her family. They consented for the publication of clinical images & case details. The copy of the same will be shared if the editor-in-chief of this journal requests.

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Jayakumar TK.

CRedit authorship contribution statement

Jayakumar TK: Concept, Literature review, writing paper, clinical photographs

Avinash Jadhav: Literature review, editing manuscript

Manish Pathak: Concept, editing the draft

Arvind Sinha: Critical appraisal, Editing manuscript.

Declaration of competing interest

None.



Fig. 2. CT scan images of giant hydronephrosis. The axial section image accurately depicts the colon lying over the hydronephrotic kidney mirroring the clinical examination findings.

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