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Renal Ectopia: A Report of Four Cases

OA OGUNBIYI* AND NA AKINGBEHIN**

Summary

Ogunbiyi OA and Akingbehin NA. Renal Ectopia: A Report of Four Cases. *Nigerian Jornal of Paediatrics* **1985; 12:91.** Four cases of unsuspected low renal ectopia in childhood are presented to highlight the vital role of routine intravenous urography in all cases of questionable lower abdominal masses and vague abdominal pains with or without gastro-intestinal symptoms. This simple routine procedure eliminates the need for unnecessary surgery.

Introduction

THE embryology of the kidneys is unusual in that the kidneys ultimately lie at a level higher than that of their original positions. Arising deep in the pelvis in the first few weeks of foetal life, the kidneys gradually ascend to their final anatomic positions. Such a difficult embryological development can produce many renal and ureteral anomalies, among which renal ectopia and fusion are frequent.[1]

In a recent prospective study of 2,000 consecutive intravenous urograms carried out at the University College Hospital (UCH), Ibadan, 26 cases of ectopic kidneys, an incidence of 1.3%, were encountered (OA Ogunbiyi; unpublished data). Thus, renal ectopia is not uncommon in Ibadan. Some of the 26 cases were incidental findings at urography carried out for such conditions as hypertension or prostatic enlargement. Others presented as palpable abdominal masses, or with such symptoms as haematuria, urgency, dysuria and frequency of micturition. Many others however, presented with gastro-intestinal symptoms and/or recurrent lower abdominal pains. In general, low ectopic kidneys are prone to obstruction, infection and stone formation.[2]

The purpose of the present communication is to report four cases of unsuspected renal ectopia in childhood as well as to emphasise the important role of routine intravenous urography in all cases of questionable lower abdominal masses and vague abdominal pains with or without gastro-intestinal symptoms.

University College Hospital, Ibadan

Department of Radiology

* Senior Lecturer

Department of Surgery

** Senior Lecturer

Case Reports

Case 1

MA, a 10-year-old girl, was hospitalised because of a three-day history of fever, anorexia, peri-umbilical abdominal pain, vomiting and diarrhoea. The stool was slightly blood-stained. There was no history of haematuria, dysuria or frequency. On examination, she was found to be dehydrated, but was neither anaemic nor jaundiced. There was mild abdominal

distension with abdominal tenderness. An ill-defined mass, of soft consistency, was palpable in the right iliac fossa. An appendix abscess, an intussusception, amoeboma and gastro-enteritis, among other possibilities, were considered. Haemogram was normal with a packed cell volume of 39% and a white blood count of 9,500/cmm. (9.5 x 10^9/L). The serum electrolytes were sodium 136 mEq/L (136mmol/L) potassium 3mEq/L, (3mmol/L), chloride 110mEq/L (110 mmol/L) and bicarbonate 16 mEq/L (16mmol /L) and the blood urea 36 mg/100ml (6 mmol/L). A plain abdominal radiograph showed slight intestinal ileus, but no definite evidence of mechanical intestinal obstruction. Barium enema studies were contemplated, but could not be done due to faulty screening machine.

The patient was rehydrated, given antibiotics and had exploratory laparotomy. The appendix was normal and there was no evidence of an intussusception. The palpable right iliac fossa mass turned out to be an ectopic horse-shoe kidney, confirmed post-operatively by intravenous urography (Fig.1). The patient made an uneventful post-operative recovery.

Fig. 1 Intravenous urogram in Case 1, showing ectopic iliac horse-shoe kidney.

Case 2

TA, an 8-year old girl, was admitted into the children's emergency room with a history of fever, anorexia, vomiting and diarrhoea of two days' duration. There were no urinary symptoms. Examination revealed a mildly dehydrated child without evidence of anaemia or jaundice. The abdomen was full and there was a soft, tender, immobile mass in the right para-umbilical region. A plain abdominal radiograph revealed some degree of intestinal ileus, but no frank evidence of a mechanical intestinal obstruction. A clinical diagnosis of intussusception was made, but this was not confirmed by barium enema. A laparotomy was then undertaken; the appendix was normal and there was no intussusception. An ectopic kidney in the iliac fossa was discovered and this was confirmed ten days post-operatively, by urography.

Case 3

SG, an 11-year-old girl, was hospitalised because of pain in the right iliac fossa, fever and vomiting of one week duration. There was no haematuria, frequency or dysuria. The parents claimed that she had been having recurrent pains in the right iliac fossa for four years. On examination, the child was febrile and there was guarding and tenderness in the right iliac fossa. No definite palpable mass was evident. A clinical diagnosis of acute-on-chronic appendicitis was made. Haemogram and electrolytes and urea determinations were normal. A laparotomy was undertaken at which a normal appendix was removed. However, an ectopic pelvic kidney was discovered and urography performed a few days later, revealed, a right ectopic kidney in the iliac fossa.

Case 4

NA, a 10-year-old boy, was hospitalised three times in one year because of recurrent fever, left iliac fossa pain and an ill-defined left iliac fossa mass. There was no history of associated haematuria, dysuria or frequency of micturition. The patient apparently responded well to antibiotics and analgesics on the first and second admissions, the provisional diagnosis being an anterior abdominal wall abscess either pyomyositis or infected haematoma, because of associated skin induration. A diagnostic aspiration was reported as unrewarding.

Physical examination on the third admission revealed a febrile child, who had lost some weight, but was not anaemic or jaundiced. He was normotensive. There was fullness in the left iliac fossa where a tender, soft mass of 10cm by 8cm was palpable. There was induration of the overlying skin. The provisional diagnosis of pyomyositis or infected haematoma or an intra-abdominal inflammatory mass such as ectopic appendix abscess, was still maintained. Prior to laparotomy, a thorough examination under anaesthesia was first undertaken. The mass was needled and infected urine was obtained. The laparotomy was therefore abandoned and an intravenous urogram was carried out a few days later. This revealed gross hydroureteronephrosis of an ectopic left kidney, with poor and very delayed contrast excretion (Fig. 2). A micturating cystourethrogram was performed in order to exclude ureteric reflux. There was no vesico-ureteric reflux. A flush aortogram was also carried out so as to define the vascular supply, since surgery was being contemplated. The patient subsequently had a left nephrectomy and the post-operative course was uneventful.

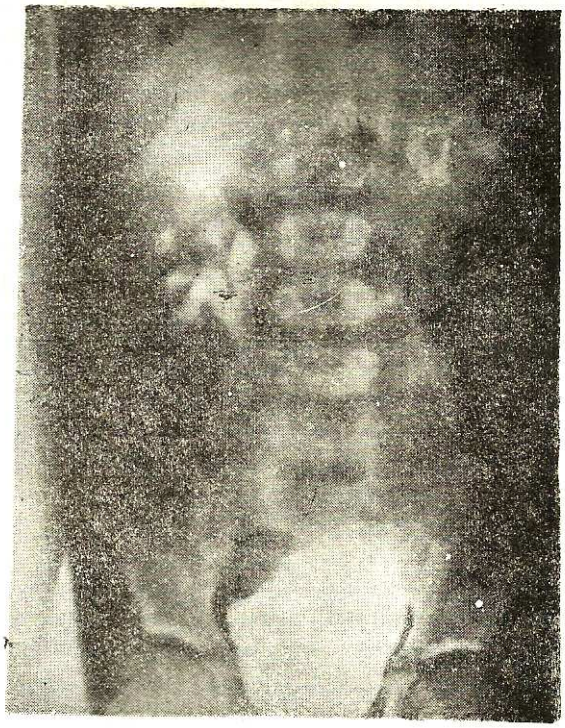

Fig. 2 Intravenous urogram in Case 4, showing a normal right kidney, but gross hydroureteronephrosis of a low left ectopic kidney (see arrow heads).

Discussion

In a review of 32 case histories of patients with ectopic kidneys, Ward, Nathanson and Draper[2] found that there was nothing in the records to suggest to the surgeon that renal ectopia was suspected. These authors highlighted the vagueness of presenting symptoms and showed that 18 of the 32 patients presented with symptoms pertaining to systems other than the urogenital. They also emphasised the importance of pre-operative urography in patients with an abdominal or pelvic 'tumour' of questionable aetiology as indeed, two of their patients underwent exploratory laparotomy for a pelvic 'tumour' which was subsequently found to be a pelvic kidney. Kyrayiannis, Stevos and Deliveliotis[3] have also reviewed 61 patients with renal ectopia diagnosed over a period of 15 years and concluded that the finding of a lower abdominal mass together with vague abdominal symptoms must raise the suspicion of an ectopic kidney.

Our four patients, aged between 8 and 11 years, presented with vague abdominal symptoms and fever. The fever in case 4 was recurrent and due presumably, to recurrent urinary tract infection, the underlying cause being the hydroureteronephrotic kidney. In each of the four cases, a mass was palpable in the iliac fossa. Various diagnoses, including appendix abscess, acute-on-chronic appendicitis, intussusception, amoeboma and pyomyositis were made. It is noteworthy that the correct diagnosis of ectopic kidney was made at laparotomy in cases 1-3 and at an attempted laparotomy in case 4. It should be emphasised that the diagnosis of ectopic kidney requires a high index of clinical suspicion. Confirmation of the diagnosis should be by appropriate radiological investigations, including barium enema, intravenous urography and ultrasonography.

References

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