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RESEARCH ARTICLE

CROSSED ECTOPY OF THE KIDNEY WITHOUT FUSION OF THE EXTREMITIES IN THE RADIOLOGY AND MEDICAL IMAGING DEPARTMENT OF THE CHU POINT ''G'' : ABOUT A CASE

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Abstract

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Croissed renal ectopia is a very rare congenital anomaly. It designates a transposition of the two kidneys on the same side of the midine with one of the ureters, of length adapted to the seat of the ectopic kidney, which croisses the midiline to implant in the bladder on the opposite side.It is due to an anomaly in the embryonic development of the metanephretic blastema between the fourth and eighth week of management. Renal fusion between the two parenchyma is frequent and this anomaly is most often asymptomatic and discovered by chance.During this anomaly the treatments is linked to the existence of symptoms and/or complications. We report the observation of a 27-year-old patient,mother of two children with a history of two caesarean sections in 2008 and in 2013 for basin limit, presentint with crossed renal ectopia without fusion of the extremities, discovered fortuitously durind an abdomino-pelvic ultrasound for pain in the right flank radiating into the right iliac fossa,collected in the radiology and medical imaging department of University Hospital Center point ''G'', whose purpose of this work was to bring the place of ultrasound in the diagnosis of renal ectopia croissed without fusion with a review ohe literature.

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Introduction:-

Renal crossed ectopia is a very rare congenital anomaly **[1, 2, 3].** It was first described by Wilmer in 1938**[4].** It is a malposition due to a developmental defect, very often accompanied by malrotation, always comprising abnormal vascularization with one or more ectopic arteries and a ureter of a length adapted to the seat of the kidney **[5].** It designates a transposition of both kidneys on the same side of the midline **[6].** The 2 kidneys may or may not be fused, giving the appearance of overlapping kidneys **[6].** The discovery is most often fortuitous, during a routine ultrasound or during an autopsy. This anomaly is most often without specific symptoms. We report here a case of crossed renal ectopia without fusion of the extremities of fortuitous discovery in a patient, the aim of which was to clarify the place of ultrasound in the diagnosis of crossed renal ectopia with a review of the literature.

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Observation:-

It was Mrs. H.A, 27 years old, mother of two (02) children, divorced, residing in Daoudabougou, Commune V of the district of Bamako with a history of two caesareans for limited basin in 2008 and in 2013; no family history (ATCD) of known uro-genital malformation. She was referred to the Department of Radiology and Medical Imaging of the Point "G" University Hospital Center (CHU), for an ultrasound for pain in the right flank radiating into the right iliac fossa repeatedly since several years. This pain is tingling or sometimes in the form of an attack of right renal colic without any other specific associated symptom. Faced with this sign, ultrasound and abdominopelvic computed tomography, and biological examinations were requested. The abdomino-pelvic ultrasound was performed on a brand ultrasound : SIEMENS Healthieneers ACUSON NX3 equipped with four probes: CH5-2; 11L4; C8-5 and endocavitary BP10-3. She had found an empty left lumbar fossa with the presence of the 2 kidneys on the same side of the midline on the right. The right kidney in its normal position and the ectopic kidney located in the ipsilateral pelvis (right iliac fossa), **(Figure 1).** They are alithiasic with good cortico-medullary differentiation and without dilation of the pyelo-calicial cavities. The right kidney measures 103x52x46 mm and the ectopic measures 85x37x35 mm kidney.

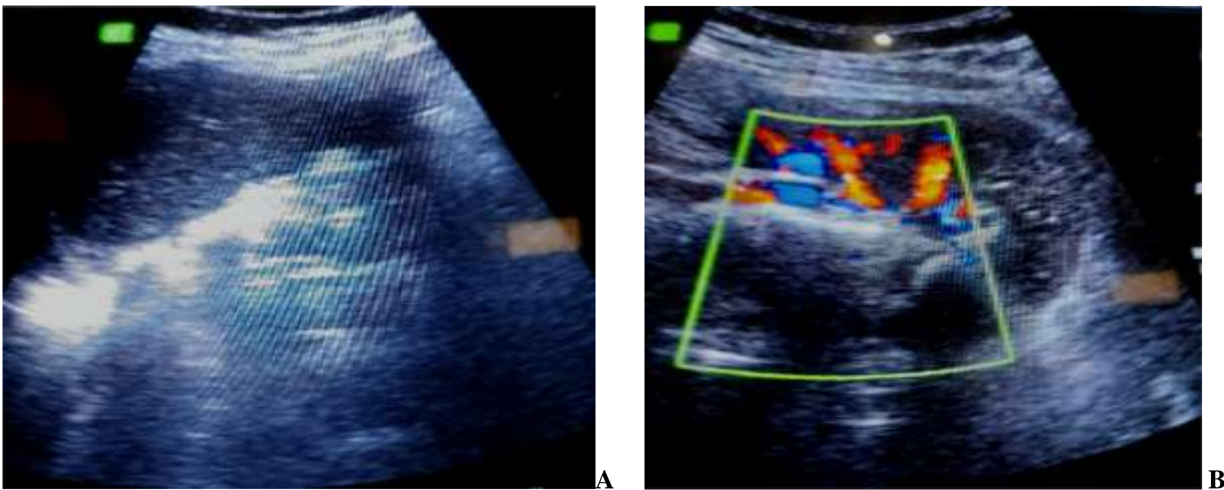

Figure 1(A and B):- Abdominal ultrasound showing an empty left lumbar fossa and an ectopic kidney sitting in the right iliac fossa.

The liver is of normal size, regular contours, echo homogeneous structure. The intra and extra hepatic bile ducts are non-dilated and of normal caliber. The gallbladder and pancreas are without ultrasound abnormality. The spleen is enlarged in size measuring 135 mm long axis, regular contours and homogeneous echostructure. The uterus is of normal size measuring 87x41x53 mm. Its contours were regular and its structural echo was homogeneous. It is empty with a fine and regular endometrium and a homogeneous myometrium. The adnexa are normal on ultrasound. We note the presence of a liquid effusion blade in the Douglas. Uro-CT, had confirmed the diagnosis of renal ectopia without fusion of the extremities of crossed kidneys with malrotation of the normally positioned right renal pelvis associated with arteriovenous abnormalities. The 2 kidneys are located on the same side of the midline on the right in a way superimposed without fusion of the extremities with a badly rotated right kidney and the ureter of the ectopic kidney which crosses the midline for a normal connection to the bladder. The lower pole of the kidney in normal position is located above the upper pole of the ectopic kidney. After injection of iodinated contrast product, the kidneys secrete and execrate within normal times. The ureter of the right kidney normally positioned on its anatomical course. The ureter of the ectopic kidney crosses the midline to end in the bladder on the contralateral side. **(Figures 2, 3 and 4).**

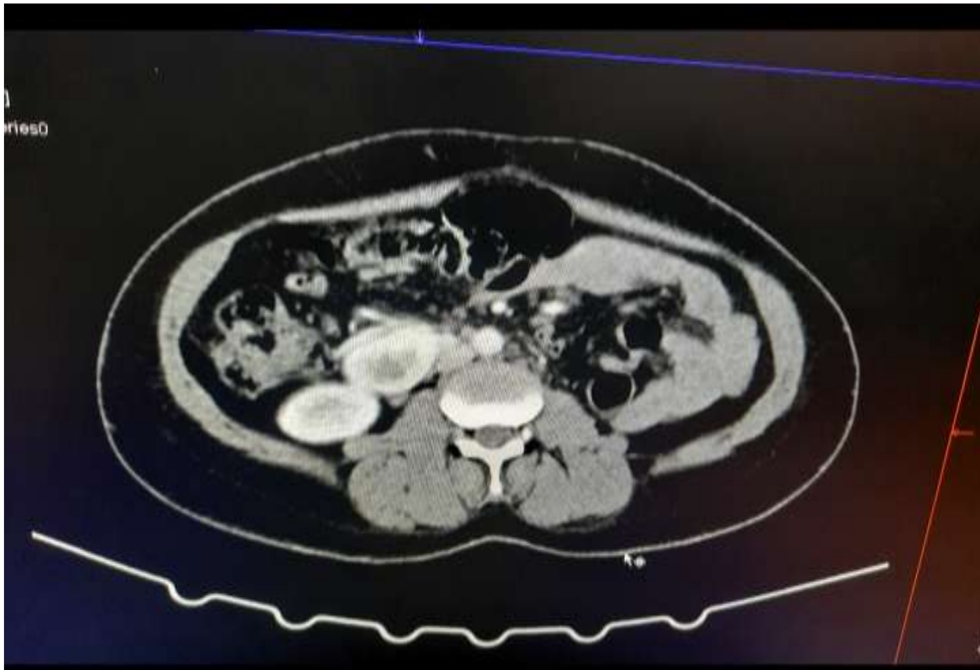

Figure 2:- Uro-CT in axial section, showing the two (02) kidneys located on the same side of the midline without fusion of the ends of the crossed kidneys.

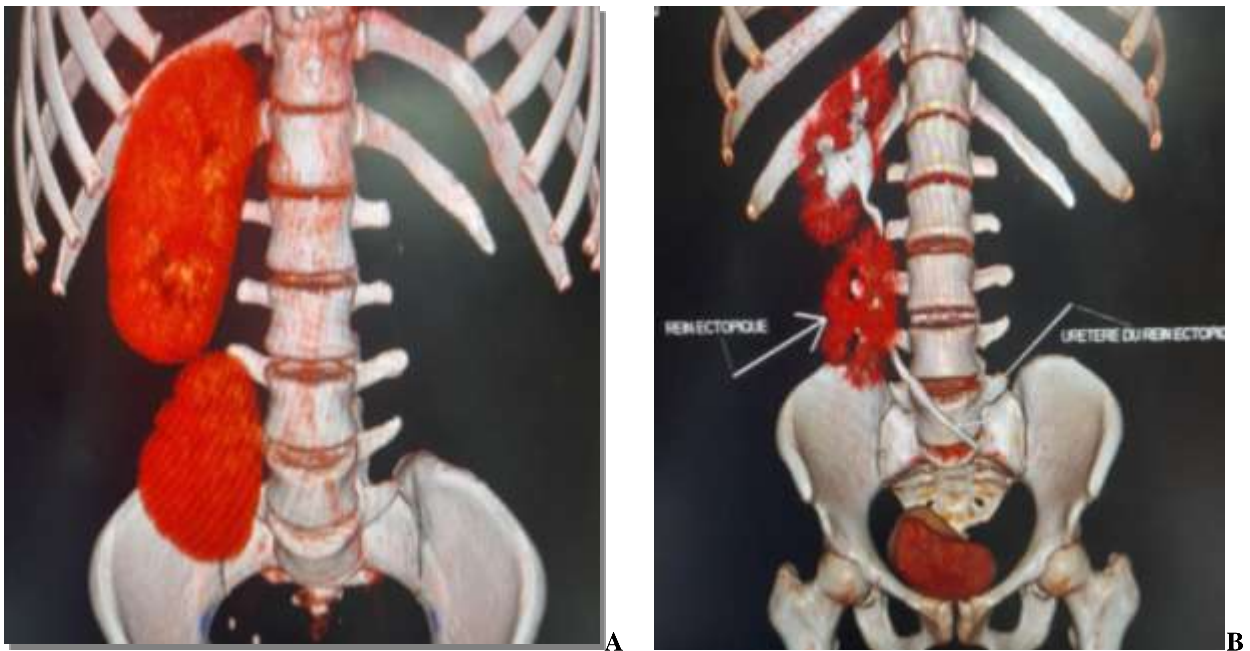

Figure 3:- Uro-CT in 3D reconstruction showing superimposed kidneys (A) and ureter of the ectopic kidney crossing the midline for a normal outlet in the bladder (B)

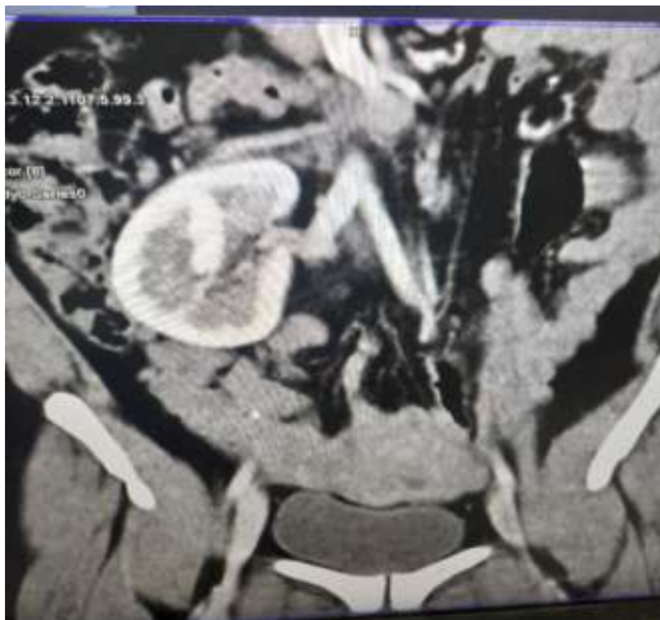

Figure 4:- Uro-CT at arterial times showing the renal artery of the ectopic kidney originating in the right common iliac artery.

Biological examinations had found: a Serum creatinine: normal at 0.90mg/dl;

The ECBU which had found: an infection with the germs gardnerellas vaginalis;

Random blood sugar: normal at 140mg/dl. The diagnosis of crossed renal ectopia without fusion of the extremities was retained with normal renal function and the patient was referred to a urologist for better management.

The action to be taken by the urologist was:
1. Make the patient aware of the congenital anomaly detected on ultrasound (crossed renal ectopia).
2. Reassure the patient that the detected anomaly is compatible with subsequent pregnancies and that her previous caesareans were not related to her congenital anomaly.
3. Antibiotic therapy adapted to the result of the ECBU.
4. Analgesics: Paracetamol and ibuprofen tablet.
5. Advise the patient to contact her urologist if necessary.

Discussion:-

Enal crossed ectopia is a very rare congenital anomaly **[1, 2, 3].** It is due to an anomaly in the embryonic development of the urethral bud and the metanephritic blastema between the fourth and eighth week of gestation. Its real incidence is not known because most often asymptomatic, its prevalence has been estimated on autopsy series between 1/1300 and 1/7600, is characterized by a male predominance with an x-ray sex of 3 men/woman **[7].** Our observation concerns a woman. In 90% of cases, the ectopic crossed kidney fuses with the normally positioned kidney and in 10% of cases it remains unfused [3], like our patient with malrotation of the normally positioned right kidney.

There are four types of crossed renal ectopia **[8]**:
1. Renal ectopia crossed with fusion,
2. Cross renal ectopia without fusion,
3. Solitary renal ectopia,
4. Bi-lateral crossed renal ectopia.

Our case was a crossed renal ectopia without fusion of the extremities.

In the literature, the prevalence of cross-renal ectopia reported was 0.01% without fusion, as in our patient, and 0.04% with fusion **[9].** Our patient presented with crossed renal ectopia without fusion of the extremities, discovered by chance, with a badly rotated right kidney, her pelvis is placed on its anterior surface and an ectopic kidney reduced in size sitting in the ipsilateral iliac fossa without fusion of the extremities whose diagnosis was was brought in a context of recurrent abdomino-pelvic pain following an abdomino-pelvic ultrasound. In practice, renal ectopia, particularly pelvic ectopia, poses various diagnostic problems and especially diagnostic errors **[10].** In our study, the patient had a history (ATCD) of two caesarean sections, one in 2008 and the other in 2013 for borderline pelvis, but the diagnosis of her congenital anomaly had not been demonstrated by any ultrasound examination. hadn't been done, not even before his cesareans. Vascular abnormalities can be seen due to the renal transposition more or less associated with the malrotation and the lower position of the ectopic kidney, like our case in which the right renal artery arises from the abdominal aorta and the artery of ectopic kidney from the right common iliac artery. Before the era of ultrasound, these patients had a heavy radiological record **[10].** Currently, ultrasound makes it possible to make the diagnosis quickly [10] and to avoid various unnecessary explorations. It prevents the clinician from getting lost in unnecessary and sometimes harmful examinations. It is therefore necessary to perform an abdominal ultrasound examination in the face of all atypical abdominal symptoms [10]. The diagnostic examination of choice for crossed renal ectopia is abdominal ultrasound because it is a simple and non-invasive examination, reproducible and inexpensive, deserves to be performed as first-line treatment in the event of a suspicion of ectopia. renal; and makes it possible to make the diagnosis of an ectopic kidney with assessment of the quality and value of the kidney by studying the cortical index and above all a precise study of the relationship of the ectopic kidney with the neighboring organs **[11].** From a therapeutic point of view, the discovery of asymptomatic cross-renal ectopia does not necessarily imply subsequent complications, abstention from surgery must be covered by ultrasound monitoring and periodic urine analysis, the kidneys have not no need to be separated even in case of fusion **[7,12].** The treatment is linked to the presence of symptoms and/or complications. Concerning our patient, the action to be taken was a symptomatic treatment based on antibiotic therapy adapted to the result of the ECBU and antibiogram; analgesic (paracetamol 500 mg tab and ibuprofen 400mg tab).

Conclusion:-

Abdominal ultrasound certainly allowed the fortuitous discovery of a rare case of crossed renal ectopia without fusion of the extremities. Uro-CT confirmed the diagnosis with malrotation of the right kidney (pelvis placed on its anterior surface) normally positioned as well as arteriovenous abnormalities.

Ultrasound is the diagnostic examination of choice for this condition and monitoring is based on periodic ultrasound monitoring.

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