

Different Imaging Modalities in a Clinical Case of Cross-Fused Renal Ectopia (CFRE)

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Background

Crossed fused renal ectopia (CFRE) is a type of renal anomaly where the kidneys are fused together and are located on one side of the vertebral column. Two collecting systems remain, and two ureters enter each side of the bladder. One ureter does cross over the midline. This renal anomaly occurs during fetal development, approximately in the first trimester. The kidneys are major organs that filter the blood and rid the body of any toxins through urine. When they do not work properly, the body has a harder time ridding itself of waste

Purpose

The purpose of this case study is to describe the different imaging modalities and their role in the diagnosis of CFRE and complications it may cause. Imaging studies such as a nuclear medicine renogram can show how well or how little the kidneys are functioning, while other exams such as ultrasound show the anatomy of the kidneys. Different imaging modalities is relevant to the diagnosis and treatment of CFRE because other problems may arise leading to complications within the body such as vesicourethral reflux.

Case Description

The patient was a 6-year-old male with a known renal abnormality. The patient was born with fused kidneys in his lower right quadrant. He had no known family history of CFRE. This case involves different imaging studies as part of routine surveillance.

Exams and Outcomes

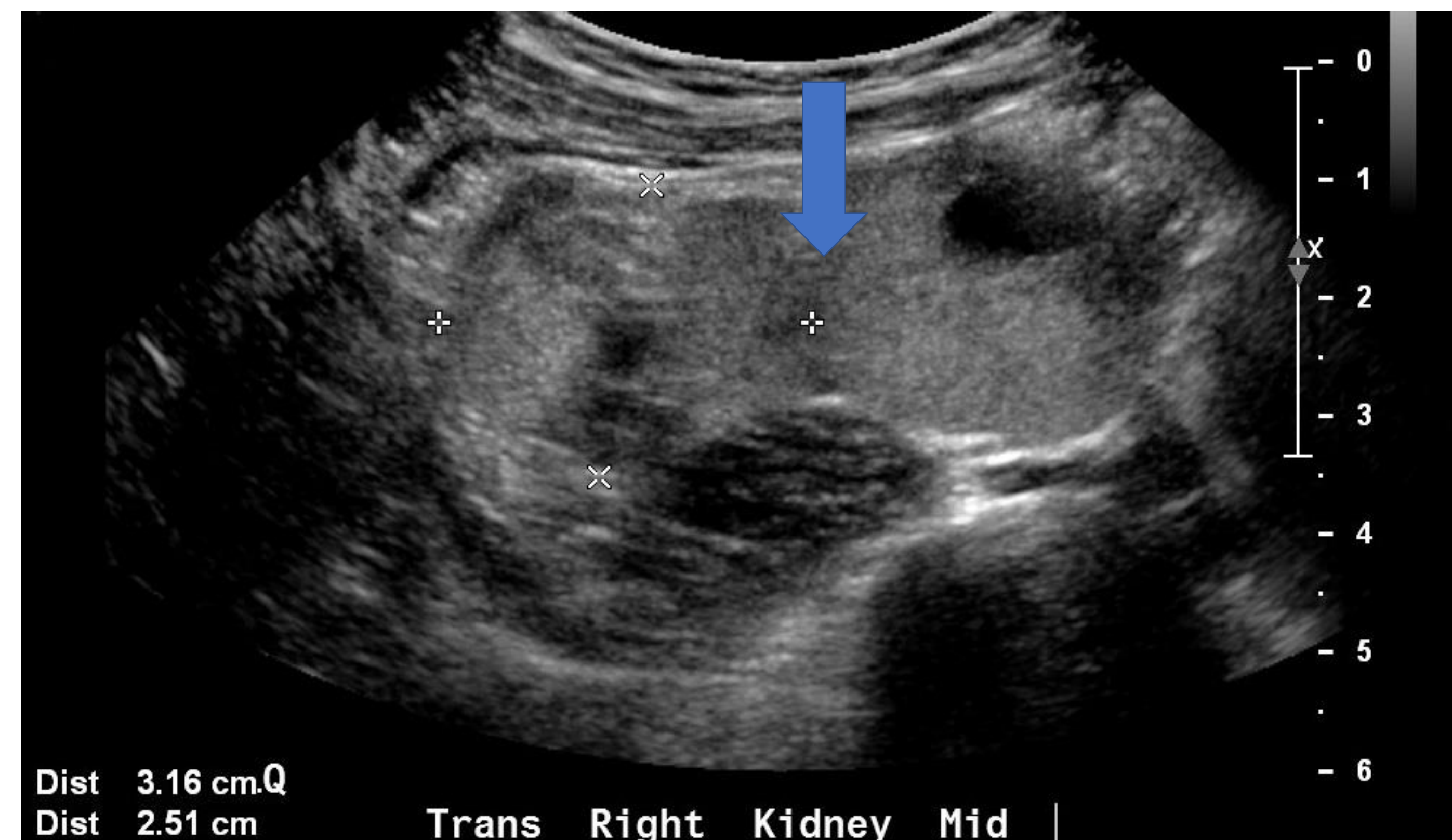


Figure 1. Sonography: The blue arrow indicates where the kidneys are fused together. The four marks indicate the measurement of the right kidney. The ultrasound image is a great reference to show anatomy and size.

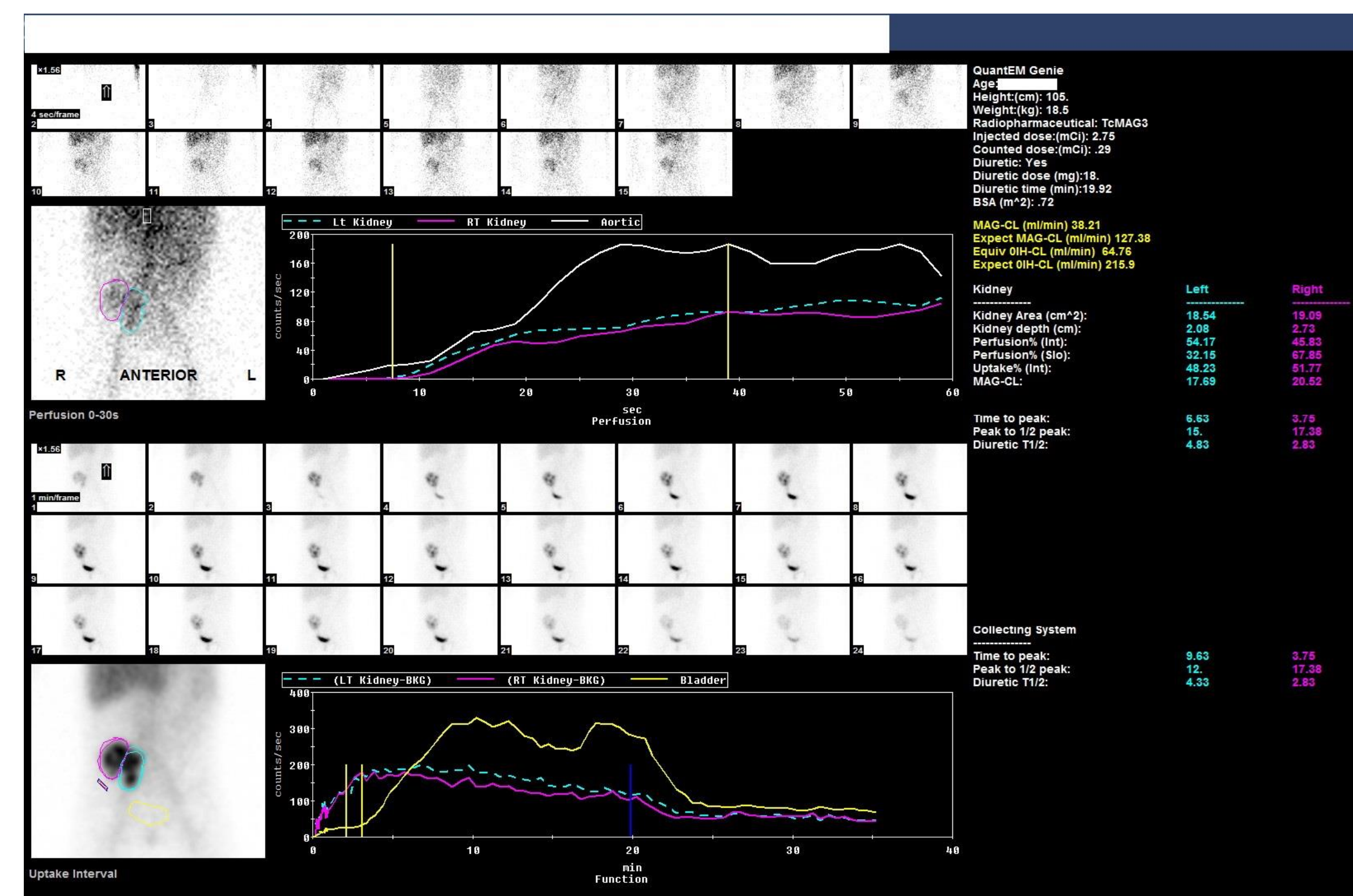


Figure 7. Nuclear Medicine: The clinical summary gives an overall result of a nuclear medicine renal study. It provides all pertinent information concluding radiologist findings.

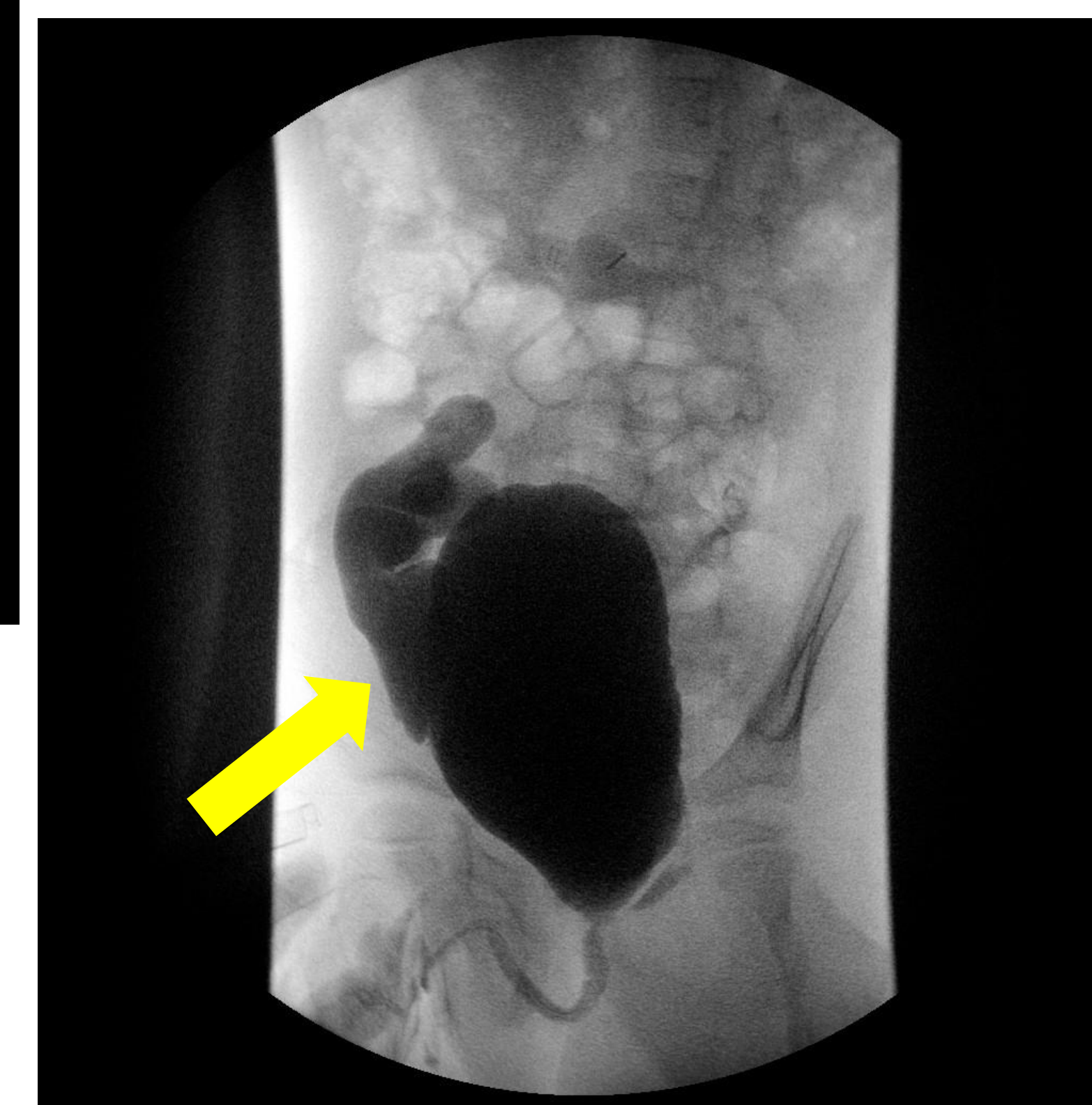


Figure 10. Radiographic Fluoroscopy: Grade IV vesicoureteral reflux.

Discussion

There are times when CFRE may become confused with other renal abnormalities. Sometimes it may be confused with a horseshoe kidney. Using different imaging modalities, even outside the ones used for this case study, are beneficial in determining the anatomy and function of the kidneys.

The importance of this study is to show how vital imaging is in the diagnosis and treatment process. It also allows staff in different positions to provide different aspects of patient care and allows communication between professionals.

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