Non Hodgkin Lymphoma Detected by Renal Flow Study-A Case Report

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Abstract

A patient having a tumour in the right para-aortic region (proved to be a non-Hodgkin Lymphoma on biopsy) was for the first time detected by a non-invasive, isotope study with TC99m MMSA for renal blood flow. The lesion was outlined due to displacement of aorta and involvement of the upper pole of the right kidney as seen 15 seconds after the I.V. injection of MMSA (JPMA 35:51, 1985).

Introduction

The technique of taking sequential pictures over the kidneys after giving an intravenous injection of pertechnetate was first used in 1.966 to find out the state of renal blood flow in the transplanted kidney[1]. The technique has the advantage of giving more or less similar information noninvasively as obtained by aortography which is an invasive technique and is also contraindicted in cases of renal function impairment. Later on the pertechnetate was substituted for Tc99m -Glucoheptonate which gives the same information as pertechnetate about the transit through the renal tissue and at the same time gives a static image of the kidney at the conclusion of the study[2].

This technique was later on used for detecting extent of renal injuries[3] and differentiating between vascular and avascular focal defect in the kidney[4].

At the Atomic Energy Medical Centre, Mayo Hospital, we have used Tc99m-Monomer. captosuccinic acid (MMSA) both for the renal flow study and renal imaging.[5] The advantage is that both these tests are performed by a single injection of radiopharmaceutical. MMSA is excreted by the kidney tubules and is an ideal substance for renal imaging. The patient is positioned under the Gamma Camera in prone position with a pillow under his abdomen and the detector focused to view both the kidneys and the area around. After an injection of Tc99m MMSA (5 mci) immediate sequential pictures are taken at the intervals of 5 seconds for one minute obtaining 12 frames, and a static picture is taken after about 15 minutes to complete the study.

Case Report

A 25 years old lady was admitted in the hospital with a history of pain in the right lumber region. The pain gradually became severe and sometimes the symptoms of acute intestinal obstruction would appear. On clinical examination the only positive finding was some tenderness in the right lumbar region right iliat fossa and epigastrium. No mass was palpable. The leucocyte count was 9000. H=-1 2.56 G% X-Ray lumbar spine was normal intravenous pyelogram showed normal excretion on both the sides (Fig. 1).

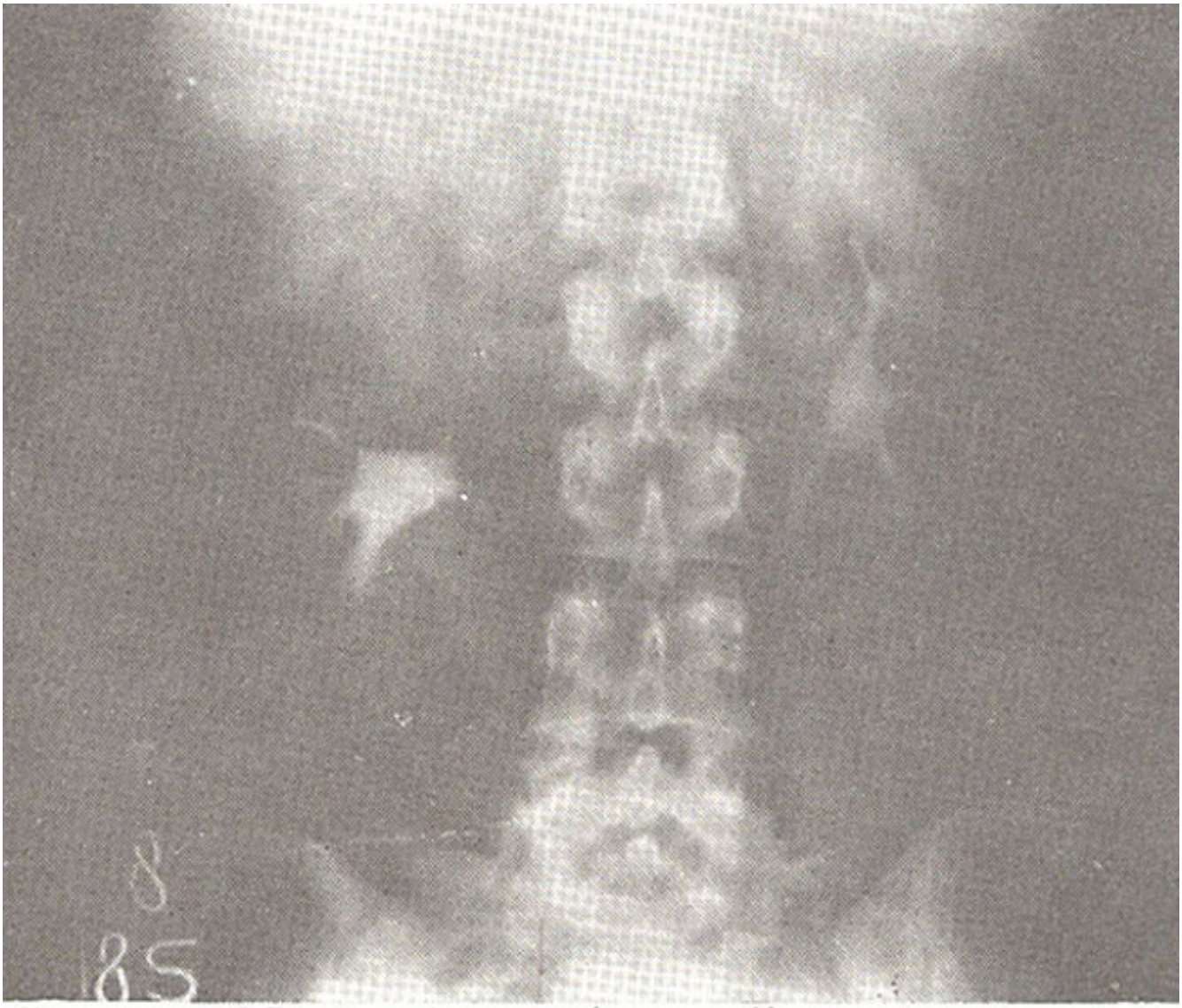

Fig. 1. I.V.P. showing no abnormality.

The patient was referred to the Atomic Energy Medical Centre, Mayo Hospital for radioisotope studies. The routine renogram with I_{131} Hippuran showed no significant abnormality except that the secretory and excretory phase on the right side were slightly delayed but were still within the normal limits (Fig.2).

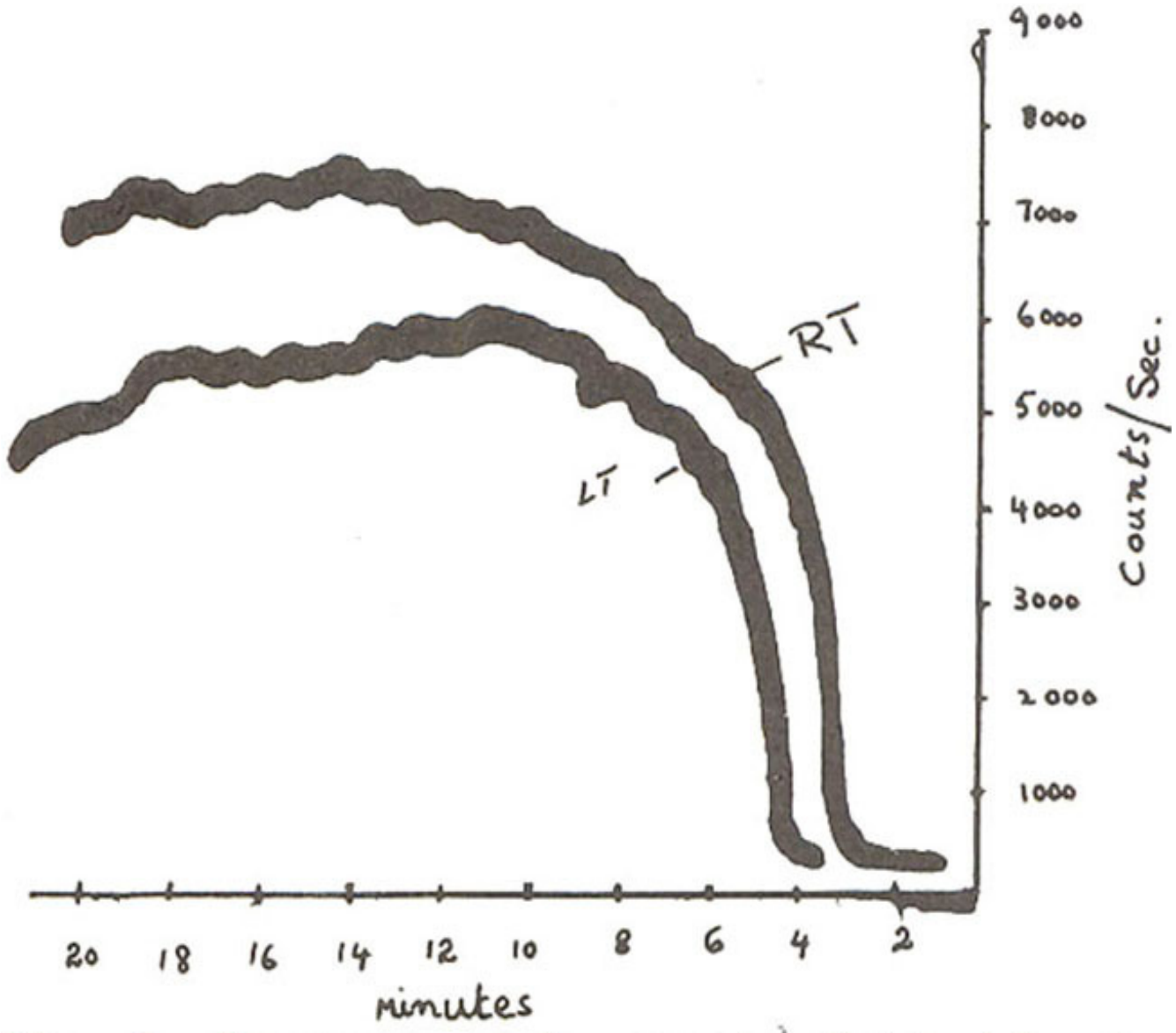

Fig. 2. Renogram study showing slightly delayed excretion R.T.

A colour scan done with Hg^{197} Neohydrin revealed a crescenteric focal defect on the medial border of the upper pole of the right kidney. Both the kidneys were otherwise normal in site, size, shape and function (Fig. 3).

Fig. 3.Renal Scan showing a focal defect at the upper pole of the Rt. Kidney.

A sequential dynamic scintigraph was then done on the Gamma Camera after an injection of 5 mci of Tc99m MMSA. Five seconds pictures were taken for one minute. The 15-20 seconds post injection frame revealed the displacement of abdominal aorta to the left side in the region just above the kidneys.

The upper pole of the right kidney showed an avascular area involving most of its medial part. The area between the displaced aorta and “nibbed” upper part of the right kidney clearly indicated the presence of a space-occupying lesion as there was much less background radioactivity as compared to the contralateral region on the left side (Fig. 4).

Fig. 4.15-20 seconds post-injection ‘Flow’ study showing a space-occupying lesion.

Laparatomy was performed which revealed an infiltrating growth arising in the right lumbar region, involving upper pole of the right kidney, porta hepatis, lesser omentum and was crossing the midline over to the left side. The bistopathology showed a non-Hodgkin diffuse, mixed cell lymphoma.

Discussion

The most important point to be stressed in the report is, the non-invasiveness of the technique like most of the other isotope procedures.

References

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