Case Report of Neonatal Ascites (Urinary) Due to Obstructive Uropathy

by *Indran Devadason*
M.B.B.S. (Sydney), D.M.R.D.(London,) M.R.C.P.(U.K.)
Radiologist,
District Hospital,
Taiping, Perak.

Introduction

URINE is the common cause of neonatal ascites (see Fig. I) and the underlying pathology is obstructive uropathy often due to posterior urethral valve in a male infant.

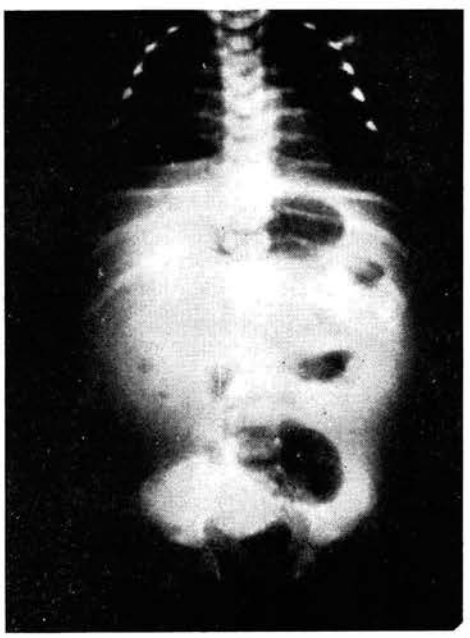

Fig. I

Ascites on Supine X'ray Abdomen: Bulging Flanks and Difuse Opacification with central (Floating) gas-filled bowel. Loss of psoas shadows.

Case Report

T.L.C., one month old male Chinese baby with history of diarrhoea one week. No improvement on treatment by General Practitioner and out patient department.

On admission (29.3.75), bowels not opened, distension of abdomen, vomiting on and off, unable to take feeds.

On Examination

Dehydrated, Drowsy, afebrile. Abdomen – Distended, non-tender, tympanitic on percussion, Vague mass Right hypochodrium. Significant Ascites present. Bowel sounds negative. P.R – no abnormality detected, Flatus tube – poor result.

Treatment

Intravenous balance solution started. 5.4.75 I.M. Penbritin and Cloxacillin 125 mg. 6 hourly commenced due to fever. Less ascites and improvement after catheterisation of bladder.

Referred to General Hospital, Kuala Lumpur for surgery.

Investigations

Peritoneal tap – 400 c.c straw coloured fluid obtained. Protein 0.8g%.
Smear showed moderate pus cells but no organisms/AFB.
Ba-enema – no evidence of Hirschsprung disease.
Bl. urea – 28 mg %
Serum electrolytes: Na-115 meg/litre
K -6.0 ,, ,,
Cl -76 ,, ,,

IVU – see figures 2 to 4.

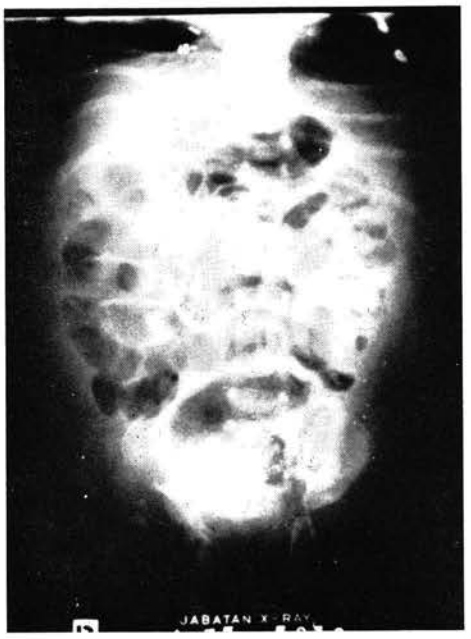

Fig. 2
Bilateral Hydronephrosis on I.V.U. 20 minute film.

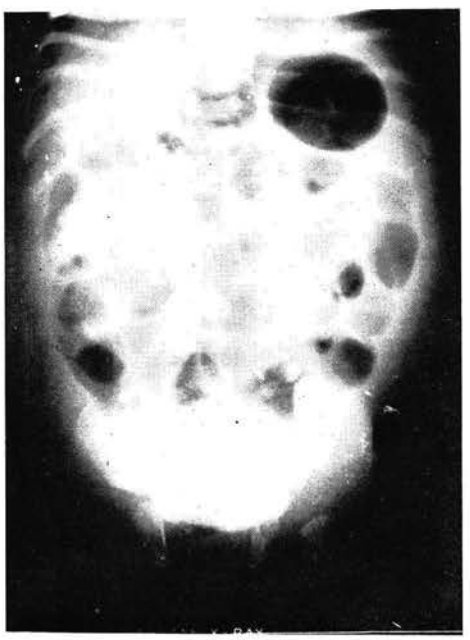

Fig. 3
45 minute film I.V.U. (R) Perirenal extravasation of contrast.

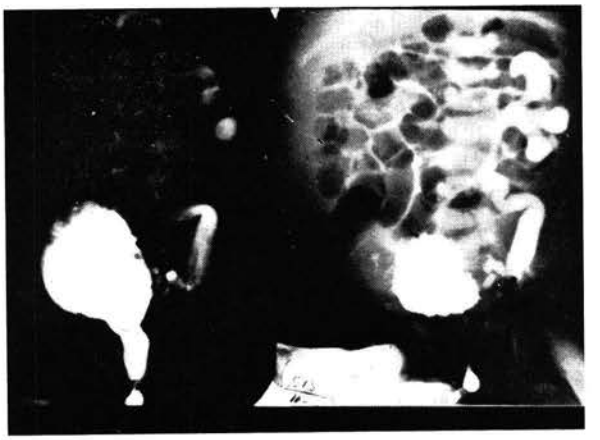

Fig. 4
Micturating Cystourethrogram. Posterior valve causing proximal urethral Dilatation. Trabeculated bladder. Reflux up (L) ureter.

Discussion

This case and recent reports show that extravasation occurs in upper urinary tract probably from the calyceal fornix unlike previous belief that transudates occur through walls of distended urinary tract. Extravasation appeared as an opaque perirenal halo in delayed films and there was no periureteral extension. Only part of the ascites is urine from peritoneal rupture the rest being peritoneal exudate.

Besides posterior urethral valves in male infants other rare causes of neonatal urinary tract obstruction with urinary ascites are pelviureteric obstruction, ectopic ureterocoeles, and urethral obstruction in females by hydrocolpos and sacrococcygeal teratomas.

Williams et al (1973) ablate the posterior urethral valve which is a single "Spinaker sail" by dorsal diathermy under radiological screening.

Acknowledgements

I wish to thank the Director General of Medical and Health Services of Malaysia, Tan Sri Datuk (Dr.) Abdul Majid Ismail for permission to publish this case report, the Medical Unit for supplying the clinical data and my Radiographers who took the excellent radiographs and especially Mr. Mohd Amin bin Deta for typing this paper and Mr. Francis Leong Foo Sen for taking the photographs.

References

Baghdassarian, O.M., Koehler, R., and Schultze, G., 1961. Massive neonatal ascites. Radiology, 76, 586-592.

Cremin, B.J., 1975. Urinary ascites and obstructive uropathy. British Journal of Radiology, 48, 113-117.

Cywes, S., Wynne, J.M., and Louw, J.H., 1968. Urinary Ascites in the newborn with report of two cases. Journal of Paediatric Surgery, 3, 350-356.

Dockray, K.T., 1970. The perirenal P sign. A new roentgenogram index to the cause and treatment of urinary ascites in babies. American Journal of Disease of Childhood, 119, 179-181.
Fordyce, W., 1894. Intrauterine ascites. Its obstetrical significance and pathology. Teratologia, 1, 61.
Garrett, R.A., and Franken, E.A., jun, 1969. Neonatal ascites: perirenal urinary extravasation with bladder outlet obstruction. Journal of Urology. 102, 627-632.
Hendren, W.H., 1971. Posterior urethral valves in boys. A broad clinical spectrum. Journal of Urology, 106, 298-307.
Kjellberg, S.R., Ericsson, N.O., and Rudhe, V., 1057. The Lower Urinary Tract in Children. Capter 10 (The Year Book Publishers Inc., Chicago).
Leonidas, J.C., Leiter, E., and Gribetz, D., 1970. Congenital urinary tract obstruction presenting with ascites at birth: Roentgenographic diagnosis. Radiology, 96, 111-112.
Marx, K., and Dale, W.A. 1961. Neonatal ascites and obstructive uropathy. Pediatrics, 27, 29-38.
Moncado, R., Wang, J.J., Love, L., and Bush, I., 1968. Neonatal ascites associated with urinary outlet onstruction (urine ascites). Radiology, 90, 1165-1170.
Moncado, R., Cooper, R.A., Reynes, C.J., Greene, R., 1973. Neonatal urine ascites associated with urinary outlet obstruction: another survivor. British Journal of Radiology 46, 1005-1007.
North, A.F., jun, Eldredge, D.M., and Talpey, W.B., 1966. Abdominal distension at birth, due to ascites associated with obstructive uropathy, American Journal of Diseases of Childhood, 111, 613-619.
Savage, J.P., 1972. Urethral valves presenting as an encysted retroperitoneal urinary collection (pseudohydronephrosis). Journal of Pediatric Surgery, 7, 334-335.
Scatliff, J.H., and Abernathy, E.m., 1974. Unusual abdominal manifestations of sacrococcygeal teratoma. Clinical Radiology, 25, 75-79.
Swain, V.A.J., Tuckern, S., Stimmler, L., and France, N.E., 1965. Perinatal ascites due to extravasation of urine from ruptured kidneys. Clinical Pediatrics, 4, 199-202.
Williams, D.I., and Eckstein, H.B., 1965 Obstructive valves in the posterior urethra Journal of Urology, 93, 236-246.
Williams, D.I., Whittaker, R.H., Barratt, T.m. and Keeton J.E. 1973. Urethral valves. British Journal of Urology 45, 200-210.
Winestock, D., and Macpherson, R.Ji, 1971. Neonatal ascites: a case for diagnosis. Journal of the Canadian Association of Radiologists, 22, 272-274.