

In 1976 Ward et al., ([\[1\]](#)) in Australia, stated that arachnoiditis after myelogram was "well recognised".

They noted that the study showed that

"complications of myelography can still occur even if recognized precautions (such as removal of the contrast) are observed."

The authors cited three case histories and in their references, noted the case report by Sarkisian ([\[2\]](#)) of spinal cord pseudo-tumour as a complication of Pantopaque myelography.

A note of warning about the use of Pantopaque in treatment of renal cysts was sounded by Mindell in the journal Radiology: ([\[3\]](#))

"Local Pantopaque instillation receives continued support in the urologic and radiologic literature as a method for treating benign renal cysts.

If benign renal cysts are a common lesion with an exceedingly small complication rate, **what is the rationale for such treatment with a potentially hazardous substance**
?"

During 1976 the body of medical literature on Pantopaque continued to increase.

Lee ([\[4\]](#)) wrote about venous intravasation, "uncommon" but associated particularly with a traumatic tap, especially at L5-S1.

Kistler and Pribram ([\[5\]](#)) claimed that epidural venography was a superior technique to myelography, especially at L5-S1.

Lieberman et al. ([\[6\]](#)), in the prestigious JAMA, described chronic urticaria and intermittent anaphylaxis after iophendylate.

Kaufmann and Jeans ([\[7\]](#)) in the Lancet warned of the increased severity of reactions to Pantopaque in patients with MS.

The authors concluded:

"demyelination may be associated with more severe reactions to iophendylate myelography".

The fibrosing and sclerosing properties of Pantopaque were well known at this time, because they were being used therapeutically in hepatic cysts.

Goldstein et al ([\[8\]](#)) used a percutaneous technique to treat a simple hepatic cyst in the same way that renal cysts have already been treated.

The therapeutic effect was achieved through the 'fibrotic reaction' the dye caused and it remained in the cyst at follow-up imaging.

Praestholm et al ([\[9\]](#)) performed intraventricular injection of oil-based contrast medium in rats.

They showed that the dye was retained in dilated ventricles for

"at least 180 days".

They suggested that blocking of the outflow of CSF by iophendylate might have been responsible for the slight dilation seen in some animals.

They recommended that iophendylate ventriculography be avoided in patients with brain or meningeal inflammation.

[1] [Ward W, Matheson M, Gonski A.](#) *Med J Aust.* 1976 Aug 28; 2(9): 333-5. Three cases of granulomatous arachnoiditis after myelography.

[2] Sarkisian SS *US Armed Forces med.* 1956; 7: 1683 Spinal cord pseudo-tumour: A complication of pantopaque myelography.

[3] Mindell HJ *Radiology* 1976 Jun; 119(3): 747-8 On the use of Pantopaque in renal cysts.

[4] Lee SH J *Can Assoc Radiol.* 1976 Jun; 27(2): 111-4. Venous intravasation of pantopaque during myelography. Report of two cases and a review of the literature.

[5] [Kistler MW, Pribram HW.](#) *Surg Neurol.* 1976 May; 5(5): 287-91. Epidural venography in the diagnosis of lumbar disc disease.

[6] [Lieberman P, Siegle RL, Kaplan RJ, Hashimoto K.](#) *JAMA.* 1976 Sep 27; 236(13): 1495-7. Chronic urticaria and intermittent anaphylaxis. Reactions to lophendylate.

[7] [Kaufmann P, Jeans WD](#). *Lancet*. 1976 Nov 6; 2(7993): 1000-1. Reactions to iophendylate in relation to multiple sclerosis.

[8] [Goldstein HM, Carlyle DR, Nelson RS](#). *Am J Roentgenol*. 1976 Nov; 127(5): 850-3. Treatment of symptomatic hepatic cyst by percutaneous instillation of Pantopaque.

[9] Praestholm J, Klee JG, Leif Klinkener ND, *Radiology* 1976; 119: 391-3 *Histological* Changes in the Central Nervous System following intraventricular administration of oil-soluble contrast media.