Residual Intradural Oil-based Contrast Agent: A Case Report

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ABSTRACT

A 53 yr. Syrian male presented with frontal headache for 2-3 months. Upon examination, no positive finding were present. The haematological tests were also normal. Pt. was advised Plain radiography of Paranasal sinuses and skull. It revealed hyperdense dots in rt. Frontal region and skull base. Cloudy frontal sinuses were suggestive of sinusitis. CT brain with contrast was carried out for further evaluation. Hyperdense dots were seen in cerebral basal cisterns and cervical spinal canal. Thoracolumbar spine was carried out for further confirmation of presence of similar hyperdense dots in spinal canal. It also revealed similar tiny radio-opaque dots in spinal canal. On Anamnesis, pt. revealed that he had undergone Myelography with an oil based contrast at the age of 18 yrs. (34yrs. ago) for Lumbar disc disease. These radio-opaque dots were residual oil-based contrast agent and were an incidental presentation.

Key words: Residual intradural contrast, Myodil, Pantopaque
INTRODUCTION
Myodil /Pantopaque (lophendylate is a fatty acid) is an oil based positive contrast media which was introduced by Steinhausen for Myelography in 1944. This was commonly used till 1980 for Myelography, Cisternography & Ventriculography and was replaced by water soluble media due to its complication and sequelae. Oil based contrast media was known to have extremely slow clearance rate from cerebrospinal fluid. Although rare, remnants of contrast agent used more than 3 decades ago are still encountered clinically. We present this case to increase awareness amongst Clinicians and Radiologists of this incidental finding on x-ray. This contrast may simulate intraspinal fat or hemorrhage on MR imaging.

CASE REPORT
53yr. Male, retired army officer, Syrian born presented in medicine OPD of GMC, Fujairah. The main complaint of patient was of mild headache in frontal region for 3 to 4 months off and on. There was no history of fever, vomiting, giddiness or vision defect. Past history was unremarkable except mild allergy to dust and had taken treatment for such headaches. There was no local tenderness or swelling. On clinical examination-BP 130/80mmhg., Pulse 70 per/min., Respiration normal. Nothing abnormal detected on CNS, Per-abdomen, CVS & Chest examination. Routine blood and urine tests were normal. Pt. was advised water’s and lateral view ski grams for Para nasal Sinuses. (Figure 1 & 2)

RADIOLOGICAL FINDINGS
Plain Skiagrams of Paranasal sinus

Report- Multiple almost rounded calcified shadows seen intracranial. Advice CT BRAIN.
CT BRAIN

On the basis of x-ray report, Pt. was advised Plain and Contrast Enhanced CT Brain. (Fig.3, 4, 5, 6, 7, 8, 9).

PLAIN CT PNS AND BRAIN
CONTRAST ENHANCED CT BRAIN

CT REPORT
HYPOPLASTIC SEPTUM PELLUCIDUM. THIS IS OF NO CLINICAL SIGNIFICANCE. (ANATOMICAL VARIATION). OLD RESIDUAL RADIOLOGY MYODIL CONTRAST USED FOR MYELOGRAPHY NOTED IN SUBARACHNOID SPACES AND FISSURES OF BRAIN. THIS IS OF NO CLINICAL SIGNIFICANCE.

WOULD REQUEST THORACOLUMBAR SPINE SKIAGRAMS TO CONFIRM THE RESIDUAL MYODIL CONTRAST.
On the basis of CT report, Pt. was advised plain Skiagram of Thoraco-Lumbar Spine. (Figures 10 & 11).

**THEORACO-LUMBAR SPINE AP/LAT VIEWS**

**DISCUSSION**

A radiographic contrast medium Myodil (iophendylate) manufactured by Glaxo Laboratories UK and also known as Pantopaque in USA was extensively used from 1946 to 1988 for Myelography, Ventriculography and Cisterongraphy. The use of Myodil is discontinued for more than 25yrs hence we rarely encounter this oil based contrast in clinical imaging. This oil based contrast media is absorbed and excreted very slowly from the body hence extremely slow rate of clearance. This concerns about the development of arachnoiditis. Pantopaque is well known for its ability to create both clinical and subclinical arachnoid reactions. Pantopaque has been known to be cleared by a process in which the dye is encysted in the subarachnoid space in
approximately 6 days and absorbed at a rate of 0.5–3 cc per year. Myodil trapped in subarachnoid and cisternal spaces usually remains clinically silent and gradually spreads along the nerve roots with the aid of gravity and finally vanishes.

Myodil can persist within the central nervous system, particularly in the basal cisterns and the Lumbosacral thecal sac, as either encapsulated droplets, which may calcify, or remain as a thin film. The thin film of contrast would be more likely to cause a diffuse reaction and possibly a systemic toxic reaction. In our case, these droplets were seen in basal & prepontine cisterns and spinal canal. Our pt. gave history of injection in lumbosacral region at the age of 19yrs 34yrs.ago) which was performed to exclude slip disc.

Residual oil based contrast has been implicated in causing chronic headaches and focal seizures. In 1982, Avrahami and Cohen published an article in German concerning post-myelography headaches persisting for more than 6 months. The authors suggested that these were the result of residual Pantopaque causing blood vessel irritation. In our case, frontal headache was for 3-4 months and pt. was allergic to dust. In our case, pt. had headache for short period and got relieved with appropriate treatment.

Contrast can be seen as remnants in imaging studies of the brain or spinal cord, such as CT or MRI even after years. On MRI, the characteristics of Myodil, Pantopaque, Iophendylate either retained in subarachnoid space or trapped in subdural space produces the intensity pattern similar that of fat and subacute blood (met-HB). It mimics like Lipoma or Subacute Hemorrhage on MRI on T1 & T2 images. (Figures 12 &13).

(From Imaging Features of Retained Subdural Pantopaque 28 Years after Myelography, Abolfazl Rahimizadeh, Ava Rahimizadeh : Department of Neurosurgery, Pars Hospital, Tehran, Islamic Republic of Iran. 16 World Spinal Column Journal, Volume 3 / No: 1 / January 2012.)
Our case suggests that Myodil trapped in the subdural space might remain unchanged for a long period of time and may be incidentally seen on ski grams obtained for other clinical condition. The easiest way to diagnose intrathecal Myodil is taking a careful history and its demonstration on plain radiographs. This case emphasizes the necessity of awareness about these rare features which continue to present even decades after abandonment of oil-based myelography.

CONCLUSION
Remnants and complications of Myodil / Pantopaque can still be seen in clinical practice and may be misinterpreted as disease. When atypical radiological findings similar to our patients are encountered, physicians should consider that they may be a rare presentation of remnants of Myodil/Pantopaque. Proper history confirms residual contrast media.

REFERENCES