

## IMAGEM EM NEUROLOGIA/IMAGE IN NEUROLOGY

# Distal Ventriculoperitoneal Catheter Migration Revealed by Radionuclide Shuntogram

## Migração de Cateter Ventriculoperitoneal Distal Revelada por Cisternoventriculografia de Radionuclídeos

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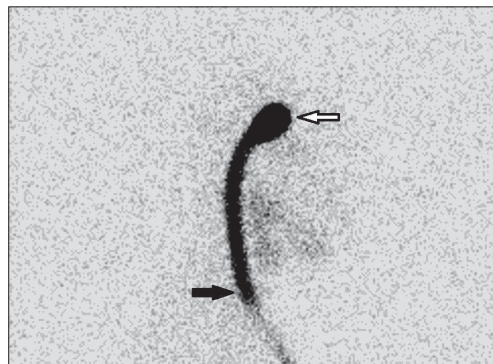
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DOI: <https://doi.org/10.46531/sinapse/IN210017/2021>

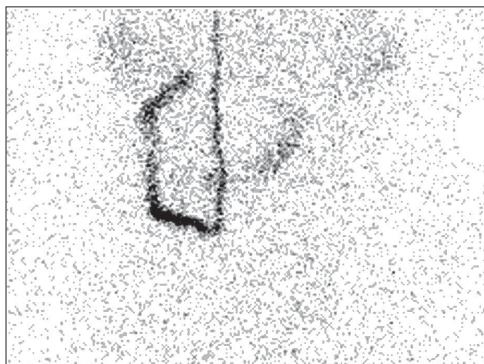
### Case

A 37-year-old woman with a history of idiopathic intracranial hypertension and ventriculoperitoneal (VP) shunt placement 12 years before, presented with right upper abdominal pain and occasional pulsatile headache. As a shunt malfunction was suspected, a radionuclide shuntogram was performed following the injection of 1 mCi sodium pertechnetate ( $^{99m}\text{TcO}_4$ ) into the reservoir.

The early images demonstrated activity in the reservoir and distal tube (Fig. 1), and an absence of free diffusion of the tracer in the peritoneal cavity with a kink at the distal limb could be seen on the 2-hour images (Fig. 2).<sup>1-2</sup> The 4-hour single-photon emission computed tomography/



**Figure 1.** Right lateral planar scintigraphy of the head performed 10 minutes after injection of 1 mCi of  $^{99m}\text{TcO}_4$  showed activity in the reservoir (white arrow) and in the distal tube (black arrow).



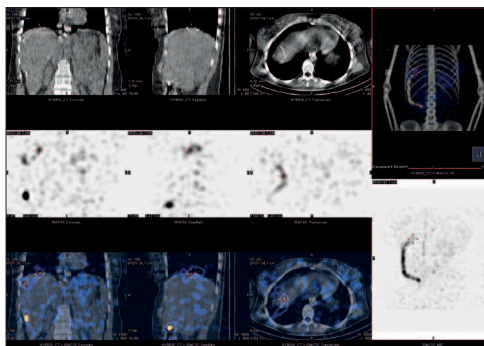
**Figure 2.** The 2-hour anterior planar scintigraphy of the abdomen demonstrated no activity diffusion in the peritoneal cavity with kink at the distal limb.

computed tomography (SPECT/CT) images of the abdomen confirmed distal shunt obstruction, due to migration of the distal catheter to the subphrenic space (Fig. 3).<sup>3</sup>

After surgical replacement of the VP shunt, the patient symptoms promptly improved.

### Discussion

Idiopathic intracranial hypertension, also known as pseudotumor cerebri, is a condition due to elevated intracranial pressure (ICP) without a detectable cause. The most common



**Figure 3.** The 4-hour SPECT/CT images of the abdomen revealed that the distal tip of the shunt migrated into the subphrenic space.

### Informações/Informations:

Imagem em Neurologia, publicado em Sinapse, Volume 21, Número 2, abril-junho 2021. Versão eletrónica em [www.sinapse.pt](http://www.sinapse.pt) Image in Neurology, published in Sinapse, Volume 21, Number 2, April-June 2021. Electronic version in [www.sinapse.pt](http://www.sinapse.pt) © Autor (es) (ou seu (s) empregador (es)) e Sinapse 2021. Reutilização permitida de acordo com CC BY-NC. Nenhuma reutilização comercial. © Author(s) (or their employer(s)) and Sinapse 2021. Re-use permitted under CC BY-NC. No commercial re-use.

### Keywords:

Prosthesis Failure; Radionuclide Imaging; Radiopharmaceuticals; Ventriculoperitoneal Shunt.

### Palavras-chave:

Compostos Radiofarmacêuticos; Derivação Ventriculoperitoneal; Falha de Prótese; Imagem por Radionuclídeos.

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Recebido / Received: 2021-03-19

Aceite / Accepted: 2021-04-24

Publicado / Published: 2021-07-29

symptoms include headaches, visual disturbances and nausea. These patients benefit from a cerebrospinal fluid shunting.<sup>4</sup>

The recurrence of symptoms related to increased ICP in a patient submitted to a previous therapeutic shunting may indicate shunt malfunctioning or obstruction. A radionuclide shuntogram with <sup>99m</sup>TcO<sub>4</sub> is useful in the assessment of shunt patency and obstruction site.

This unusual case highlights the utility of radionuclide shuntogram in the evaluation and management of patients presenting with shunt-related problems. ■

#### Responsabilidades Éticas

Conflitos de Interesse: Os autores declaram a inexistência de conflitos de interesse na realização do presente trabalho.

Fontes de Financiamento: Não existiram fontes externas de financiamento para a realização deste artigo.

Confidencialidade dos Dados: Os autores declaram ter seguido os protocolos da sua instituição acerca da publicação dos dados de doentes.

Consentimento: Consentimento do doente para publicação obtido.

Proveniência e Revisão por Pares: Não comissionado; revisão externa por pares.

#### Ethical Disclosures

Conflicts of Interest: The authors have no conflicts of interest

to declare.

Financing Support: This work has not received any contribution, grant or scholarship.

Confidentiality of Data: The authors declare that they have followed the protocols of their work center on the publication of data from patients.

Patient Consent: Consent for publication was obtained.

Provenance and Peer Review: Not commissioned; externally peer reviewed.

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