Identifying the brand and model of implanted shunts for revision planning in hydrocephalus

TO THE EDITOR: Ventriculoperitoneal shunt (VPS) surgery is a challenge for neurosurgeons. As a result of infection or mechanical failure, revision is required in 50% of cases 1–2 years and in 80% of cases 10 years after implantation.\(^1\)–\(^3\) The very promising results of a recent nationwide large-scale study conducted by Mansoor et al.\(^4\) to determine the full scope of shunt surgery in patients with hydrocephalus could help neurosurgeons standardize treatment and improve outcomes (Mansoor N, Gulati S, Fredriksli OA, et al. Epidemiology and practice variations of shunt surgery for hydrocephalus: a nationwide registry–based study. J Neurosurg. Published online February 3, 2023. doi:10.3171/2022.12.JNS222083). Currently, it is hard to trace the manufacturers and brand names of VPSs worldwide.\(^5\) Therefore, the interregional practice variations in overall shunt and revision surgery that Mansoor et al.\(^4\) found may be partially related to whether the attending neurosurgeons could identify the brand and model of the inserted shunt before revision surgery.

The attending neurosurgeon's knowledge of the inserted shunt’s brand name may affect the revision surgery plan. By obtaining this information, the surgeon can better decide which parts of the shunt need to be changed and ensure the compatibility of the parts in the revision. Different features of each brand (e.g., one piece or three pieces; a fixed or programmable valve; a distal catheter with an open end, multiple holes, simple slits, or graphite-coated slits) can provide advantages and disadvantages in the management of an individual patient.\(^1\)–\(^3\),\(^6\)–\(^8\) In some cases, it may be sufficient to simply replace the valve or distal catheter with limited surgery; however, with one-piece shunts, the entire device should be replaced. Notably, if the valve is programmable, adjusting the program noninvasively may be the only action required.

When a patient with a VPS is admitted to a hospital in a different region or country from that where the initial surgery took place and the surgical records are unavailable, the surgeon performing the revision can only gain a vague idea about the brand of the implanted shunt either radiologically or from the patient’s knowledge. COVID-19 has brought additional challenges for neurosurgeons.\(^9\) At the peak of the pandemic, people were unable to travel, and perhaps patients with VPSs had to be treated where the attending neurosurgeons could not access their medical records. Unfortunately, the healthcare system worldwide is increasingly focused on financial profitability, and quantity is treated as more valuable than quality, thus neglecting patient follow-up and deviating from medicine's primary mission of helping patients.\(^10\)

In conclusion, it is essential to have access to the previous surgical records of patients with a VPS, including the brand and model of the shunt, to be able to provide the most appropriate treatment. Therefore, a worldwide database of these patients is needed, similar to that used to monitor COVID-19 vaccine applications by brand name.

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**Disclosures**
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**Response**
No response was received from the authors of the original article.

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