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ABSTRACTS

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Telemetric ICP monitoring : a UK-first experience

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Background: Intracranial pressure monitoring is an essential investigative tool in managing Neurosurgical patients. Traditionally, each insertion entails an invasive procedure under general anesthesia, requires several days of inpatient stay and the probe, due to risks of infection, should only be left in for a maximum of 72 hours. Additionally, in order to justify such a procedure, the patient will have already undergone several other cost-intensive investigations and have spent some time under observation, in a hospital bed. A one-stop implantable telemetric device would therefore significantly reduce patient morbidity, family disruption and overall impact on healthcare budgets.
Methods: Management, cost-analysis and early clinical results of using a novel Telemetric ICP monitor in pediatric patients in the UK was evaluated. Several weeks of Intracranial Pressure Monitoring data was evaluated from 3 patients presenting over the last 19 months. 2 of the Patients had a diagnosis of complicated hydrocephalus, treated with standard ventriculo-peritoneal shunting and 1 patient had a Type III arachnoid cyst. All presented with relapsing/remitting signs and symptoms of raised intracranial pressure. They were subsequently implanted with the parenchymal Raumedic Neurovent P-Tel system, enabling ICP monitoring for 3 months, in the first instance.
Results: ICP monitoring was performed for an average of 5 days. No morbidity to date has been reported. Pathological ICP values were detected in 1 of the patients, prompting further neurosurgical intervention. An added benefit observed was the avoidance of admission, on 3 different occasions (as well as the standard protocol of investigations) when two of the patients presented to A+E and were referred with a working diagnosis of shunt malfunction. Additional analysis of these 3 episodes highlighted at least 40% potential savings (approximately 12400 GBP over 19 months).
Conclusion: Overall, the telemetric system was well tolerated and easy to handle by both parents and children. It provides an efficient and cost-effective method of investigation and management of CSF pathology in selected cases, with lower morbidity and a higher yield of diagnosis, compared with conventional ICP monitoring.