of death was the congestion of the lungs, and that congestion I ascribe to the inhalation of chloroform." Glover also occasionally helped T. N. Meggison, Hannah Greener's anesthetist, administer chloroform in Newcastle.  

In 1849, Glover left Newcastle for London where he practiced as a "philosophical and practical chemist" at the Royal Free Hospital. He preceded two famous anesthetists at that hospital: B. W. Richardson, of bichloride of methylene fame, and E. F. Junker, the inventor of a vaporizer widely used in Europe for several decades.

Glover died under mysterious circumstances at the age of 43 in his Remington home. In early April, 1859, he went into a coma after swallowing 2–3 ounces of chloroform and was found dead 24 hours later. His autopsy suggested chloroform as the cause of death. Glover had apparently swallowed the liquid in an experiment designed to induce anesthesia by the oral route. One of his obituaries praised Glover's “high reputation” and noted that "united with the playfulness and simplicity of an infant, he possessed powers of research, depth of thought, and originality of mind which fall to the lot of few labourers, even in the vast field of science." 8

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REFERENCES


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Minimizing Dead Space, Air Embolism, and Needle-Stick Risk

To the Editor.—Needle injections via latex T-ports attached directly to the peripheral intravenous cannula have been recommended during pediatric anesthesia to reduce dead space, risk of air injection/embolism, and fluid leaks during drug administration. 1 These injections frequently occur under drapes, encumbered by surgeons surrounding a small patient, and carry a considerable risk of blood-contaminated fluids returning to the patient. Aseptic assembly is demonstrated using the plastic catheter cover during the insertion process. The picture insert shows the catheter in the wide T-port hub.

FIG. 1. The method of aseptic assembly is demonstrated using the plastic catheter cover during the insertion process. The picture insert shows the catheter in the wide T-port hub.
An epidural catheter with a single end-hole can be introduced centrally into the distal latex T-port of the pre-prepared intravenous set, in an aseptic fashion, utilizing a sterile Tuohy needle and Burrell Accu-Bloc Perifix set (Burrell Medical Inc, Bethlehem, PA) (Fig. 1). The 20-gauge catheter is 3 feet long with a deadspace volume of 0.2 mL and is held snugly in the latex membrane without leaking or compromising flow. The catheter is taped securely in place and can be removed without destroying T-port integrity. Air bubbles are readily aspirated when seen in the clear epidural catheter. Injection occurs without needles under direct and unencumbered visual control. A syringe or the included occlusive cap seals the epidural catheter, when not in use.

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Spinal Anesthesia with Extremely Fine Needles

To the Editor—Post-spinal headache is the most common side effect of spinal anesthesia. Post-spinal headaches are felt to be due to CSF loss through a dural hole that does not seal after dural puncture. The incidence of spinal headache has been correlated with an increasing needle size. In the interest of reduced patient morbidity, we have introduced the routine utilization of 29-G spinal needles* for spinal anesthesia in our institution. Since May of 1983, we have prospectively evaluated the incidence of post-spinal headaches in 1,775 patients. During this period, 461 (26%) and 1,314 (74%) patients had spinal anesthesia induced using 26-G and 29-G needles, respectively. All patients were specifically questioned regarding headaches prior to and between the third and eighth postoperative day by an attending staff anesthesiologist. Headaches were classified as follows:

1. Minimal postural headache, elicited only by direct questioning by the physician.
2. Mild postural headache reported by the patient spontaneously upon questioning, but with a normal ability to ambulate and requiring only occasionally analgesics.
3. Moderate postural headache limiting daily activities and requiring analgesic therapy.
4. Postural headache as above, but persisting for longer than one week.

Although 29-G needles were utilized as the needle of first choice, a substantial number of 26-G needles were used at the discretion of the attending anesthesiologist. IM preanesthetic medication with meperidine, atropine, and promethazine was routinely administered, as well as supplementation with 1–2 mg of midazolam intravenously as indicated. Spinal anesthetics were routinely administered with the patient in the lateral supine position. Spinal anesthesia with 29-G needles required the use of a 20-G introducer needle, as well as a 2-mL luer lock syringe containing normal saline solution for aspiration because the small needle lumen precludes rapid flow of CSF upon subarachnoid puncture. Individual proficiency with 29-G needles is rapidly attained and the failure rate of spinal anesthesia in this series was 1.4% and 1.2% in 26- and 29-G groups, respectively.

The overall incidence of post-spinal headache was 1.57% in patients in the 29-G group and 3.69% in patients in the 26-G group (P < 0.01, Chi-square test). No severe headaches were noted and in no instance was an epidural blood patch required. A decreased severity of headache in the 29-G group was noted (Fig. 1) and the classified "moderate"

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* Becton & Dickinson, Tullastr. 8-12, 6900 Heidelberg, W. Germany.

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Fig. 1. Number of individual patients with postspinal headache (PSH). Every bar represents one patient. Age and sex distribution, 29-G (total = 1,574 patients); 26-G (total = 461 patients).