Correspondence

Fig. 2. Inhibitory effect of metronidazole on platelet aggregation. M1 = Metronidazole 200 μg ml⁻¹; M2 = metronidazole 500 μg ml⁻¹; m = 1 min.

Thromboxane B₂ production. The drugs were added to citrated blood at the time of sampling and incubated at 37 °C for 60 min. Ca²⁺ was then added and the blood allowed to coagulate for 60 min. Thereafter, thromboxane B₂ production in serum was determined by radioimmunoassay (TBX₂-kit TRK-780, Amersham). Results (table I) are given as mean of duplicate determinations. In the presence of imidazole 1 mmol litre⁻¹, 0.92 ng ml⁻¹ was produced; with metronidazole 500 μg ml⁻¹, 1.25 ng ml⁻¹. As seen in table I, only at concentrations of 200 μg ml⁻¹ was etomidate able to produce an inhibition of thromboxane production comparable to that produced by imidazole 1 mmol litre⁻¹.

We were unable, therefore, to demonstrate any significant inhibition of thromboxane synthesis at concentrations which can be achieved in clinical situations, and we conclude that any thromboxane synthetase inhibitory activity of these drugs must be without any clinical significance.

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Acknowledgements

The study was supported financially by Professor, dr. med. Søren Jorgensens Fond af 17. November 1980 and Karla Marie Jørgensen af Kertemindes Fond.

Table I. Inhibition, by etomidate, of arachidonic acid-induced thromboxane B₂ (TBX₂) production by platelet-rich plasma

<table>
<thead>
<tr>
<th>Etomidate concentration (μg ml⁻¹)</th>
<th>0</th>
<th>0.2</th>
<th>2</th>
<th>4</th>
<th>8</th>
<th>50</th>
<th>100</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBX₂ produced (ng ml⁻¹)</td>
<td>1.89</td>
<td>1.98</td>
<td>2.1</td>
<td>2.2</td>
<td>1.8</td>
<td>1.75</td>
<td>1.08</td>
<td>0.8</td>
</tr>
</tbody>
</table>

REFERENCES


Avoiding Accidental Dural Puncture

Sir,—I was surprised to read Dr Galea's account of his method of avoiding accidental dural puncture during location of the extradural space [1]. He might be interested to read in chapter 32 of the 5th edition of Wylie and Churchill Davidson's A Practice of Anaesthesia, published in 1984 [2]:

"Many operators use a 10 or 20 ml glass syringe whose plunger moves freely within the barrel. Provided it does not leak, this is the best tool to elicit the loss-of-resistance sign. If the syringe is filled with physiological saline, the Tuohy needle may then be advanced solely by pressure on the plunger of the syringe. Thus, when the epidural space is entered and injection of fluid becomes possible, the movement of the barrel, and hence of the needle, is halted automatically... the operator's non-dominant hand, its dorsum braced against the patient's back, steadies the Tuohy needle and acts as a brake to sudden movement by increasing the inertia of the system."

I wrote this, believing the method (or something like it) to be used quite widely. Although not exactly what Dr Doughty taught, in a sense it is a "son of Doughty" technique. The true Doughty technique—advancing the barrel while maintaining continuous pressure on the plunger with the palm of the hand—must still be used for the occasional patient with boggy ligaments.

Table I. Inhibition, by etomidate, of arachidonic acid-induced thromboxane B₂ (TBX₂) production by platelet-rich plasma
Teaching this son of Doughty technique to a succession of trainees, I have recorded a dural puncture rate over 8000 obstetric extradurals of one in 500. I am sure that others [3] could tell a similar story.

FELICITY REYNOLDS
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REFERENCES

A SPEAKING ADAPTOR FOR A TRACHEOSTOMY TUBE

Sir,—Weaning a patient from a ventilator may occasionally require tracheotomy and involve periods “on” and “off” the ventilator. Recently, a problem of communication arose with a patient who required humidified oxygen via his tracheostomy tube each time he wished to speak. He would not accept a face mask as it made him feel claustrophobic and he did not communicate effectively by writing.

A modification of the standard plastic T-piece, the speaking adaptor, was designed to incorporate a light spring valve (fig. 1). When the patient wishes to speak, he depresses the plunger to occlude the tracheostomy tube and, on release, the light spring returns the plunger to its original “open” position, allowing the patient to continue receiving humidified oxygen. In the unlikely event of the plunger sticking in the closed or semi-closed position, the patient breathes atmospheric air via the larynx. The adaptor may be used with fenestrated tubes, or standard tracheostomy tubes with cuffs deflated.

![Diagram of a speaking adaptor](https://example.com/diagram.png)

**Fig. 1.** Modification of a standard T-piece to form a speaking adaptor.

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The advantage of the speaking adaptor is that of minimal resistance to breathing, which may be a critical factor in patients with weaning problems. If the patient cannot use the adaptor himself for any reason, a second person can assist. Two patients who have used this speaking adaptor found it easy to use and felt that it helped them during their stay in the ICU.

The components of the speaking adaptor (which weighs 20 g) are: a standard plastic T-piece with a 15-mm fitting, a light spring, and a plunger incorporating a plastic disc with a thin rubber or silicone backing to facilitate occlusion of the tracheostomy port. The device was made by the Medical Physics Department, Ninewells Hospital & Medical School, Dundee.

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VASCULAR ABSORPTION OF IRRIGATION SOLUTION IN PERCUTANEOUS NEPHRO-URETEROLITHOTOMY

Sir,—The technique of percutaneous nephro-ureterolithotomy (PNL) has been perfected as one of the non-laparotomy procedures for treatment of upper urinary lithiasis [1]. Intravascular regurgitation of irrigating fluid may occur, which leads occasionally to circulatory insufficiency. In transurethral resection of prostate (TURP), neither serum total protein concentration nor haematocrit is an appropriate index of the extent of dilution of body fluid following absorption of irrigation fluid [2]. Where isotonic saline is used in PNL, the serum sodium concentration is also unreliable. We have collected irrigation solution, therefore, to assess absorbed volume, using the difference between irrigated volume and collected volume.

Eighteen patients in ASA groups I or II were studied during PNL for upper urinary lithiasis. Their mean age was 50.5 (SD 15.8) yr and body weight 58.2 (12.4) kg. Irrigating time, irrigated volume and volume infused i.v. were recorded, and the irrigating solution (isotonic saline) was collected via a transurethral balloon catheter. Intrapelvic pressure was monitored with a strain gauge pressure transducer from a catheter inserted from the nephrostomy into the renal pelvis. Extravascular absorption using 1.5% lignocaine was administered to eight of the patients, while 10 received general anaesthesia maintained with 1–2% enflurane and 67% nitrous oxide in oxygen. Central venous pressure (CVP) was monitored in all patients who received general anaesthesia.

Mean (SD) irrigating time was 111 (41) min, irrigated volume 4981 (1890) ml, absorbed volume 876 (850) ml, maximum irrigating pressure (MIP) 84.3 (47.0) cm H2O, minimum irrigating pressure (mIP) 38.1 (13.6) cm H2O and the volume infused i.v. 1103 (315) ml. In one patient momentary increase of CVP from 8 to 18 cm H2O was observed just after contrast material was injected into the renal pelvis. The absorbed volume was as little as 450 ml in this subject.

Correlation coefficients were calculated between absorbed volume and several variables, and a high correlation was observed with MIP (r = 0.91). We concluded that back flow into the kidney of irrigating fluid in PNL might occur momentarily when the irrigating pressure became increased. Velocity of absorption rather than the absorbed volume may play an important role in causing circulatory insufficiency, and