

Tried and Trusted Tools of my Trade

A Very Versatile Catheter

— Dr George Davie



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Curriculum vitae

George Davie is an old style general practitioner who has practised for more than a quarter of a century in Pretoria.

Many many many years ago, while serving as a senior houseman in a paediatric ward, I discovered the hopelessness of obtaining a "clean" midstream urine specimen from the female of our species, especially from an infant female. It is then that I began to use the least traumatic catheter I could find. This happened to be the smallest polythene tube used for intra-gastric feeding of premature babies, (Fig 1). The length of the tube varies but the diameter of size F5 is approximately 1,65 millimeter. The tip is smooth and blunt and perforations start about one centimeter from the point. Thinner tubes were available, eg those used for catheterising cats, but they were all too stiff and the tips too sharp.

I subsequently used the same sized catheter on

Summary

The author discovered a catheter to be a very useful and practical tool in his practice. He discusses how he uses it for many and diverse purposes and patients.

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adult women and on baby boys. When used on little boys, I took great care to lubricate it with enough sterile KY jelly. The use of a catheter in this way flew in the face of popular concepts at that time, because the fashionable procedure was suprapubic puncture. I found this incomprehensible: especially when once, after withdrawing the needle during an unsuccessful attempt, I found the point covered with faeces.

The arguments against using catheters with a small calibre never stood up to scrutiny in my opinion, because of the slight chance of significant trauma it could cause. This applied particularly to the adult female urethra which had to cope with much rougher treatment while the neighbouring vagina was fulfilling its duties. Professor Jeffcoate (whose textbook on Gynaecology was translated into Afrikaans by Professor Franz Geldenhuys) at that stage stressed during a lecture to undergraduates, that the female urethra, after micturition closed by contracting initially at the distal end and peristalsis then progressed towards the bladder neck. This therefore always forced some of the urine that had come in contact with the bacterial population of the vaginal introitus, back into the bladder after voiding. For me, the argument that I was carrying

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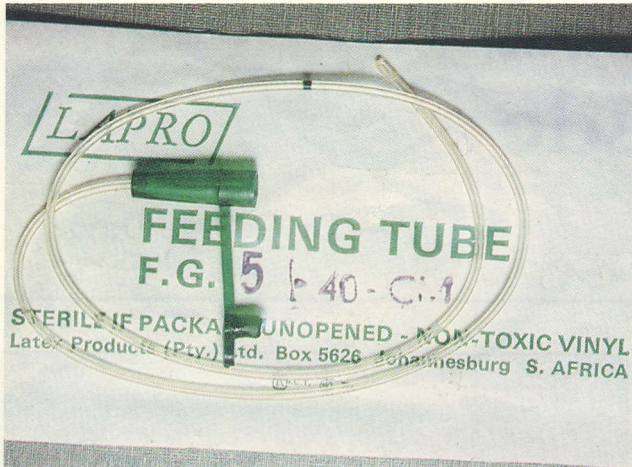


Fig 1. The smallest polythene tube used for intra-gastric feeding of premature babies.

potentially dangerous organisms into a bladder that was defenceless, thus fell away (Fig 2).

With the use of the catheter, the vexing grey area between significant and insignificant bacterial presence in the urine specimen, fell away. I had at first measured the volume of each drop and counted the colonies that grew on the agar plates after incubation, to conform with the tradition used in culturing midstream samples. This proved to be unnecessary, as I invariably found either a significant growth, or no appearance of bacteria at all. Now and then a few contaminant colonies would appear on one of the three culture plates on which the urine was dropped directly, but there would be no growth on the other two plates used. Urine was cultured on a blood agar plate, a MacConkey agar and plain agar for determining bacterial sensitivity.

I soon found that general practice had many opportunities for a gentle versatile catheter.



Fig 3. Extracting mucus from the nose with gentle suction using the mouth.

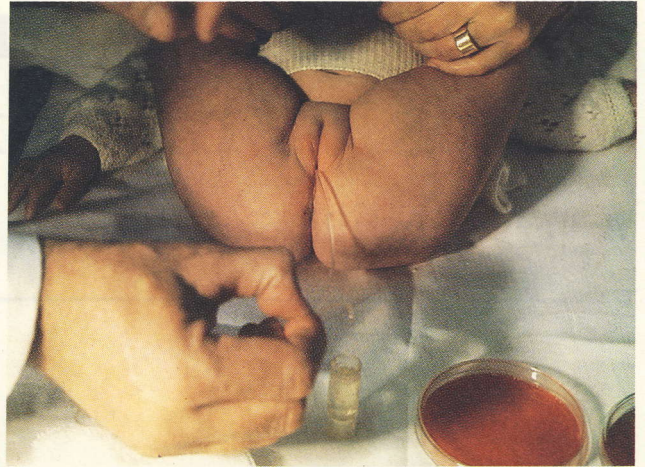


Fig 2. Obtaining a urine specimen from infants.

Mucus extraction from the nose and naso-pharynx of infants who could not breathe, was a gratifying procedure, (Fig 3). Some well meaning paediatrician had usually prescribed an antihistamine and decongestant sympathomimetic mixture, either orally or nasally. The unsuspecting mother would be grateful for the immediate effect of mucous membrane shrinkage, only to learn that this was a very short lived benefit. The

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antihistamine then proceeded to decrease the viscosity of the mucous and the sympathomimetic to inhibit the action of the cilia, so that an already inspissated mucous could not be transported at

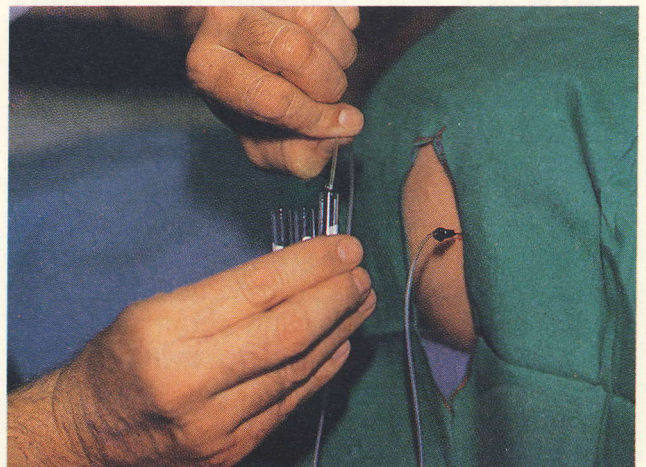


Fig 4. A lumbar puncture.

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all. This led to clogging of the nasal passages, and eventually to the inevitable glue ear.

After experimenting with various types of low pressure suction apparatus, I settled for finely controlled negative pressure of my own mouth over the open end of a 5ml syringe, with a cottonwool wad half way up the barrel to prevent me from swallowing the extracted mucous. The baby's nose was also protected from any contact with my saliva. The mucous is often so sticky that it cannot be sucked through the tube, which then has to be cleared by inserting the plunger back into the syringe and forcing the mucous back out of the tip of the catheter.

If pus had to be delicately sucked from a draining perforation following an otitis media, the same method could be resorted to. In this case the suction has to take place at the tip of the catheter, so the perforated point has to be snipped off and the sharp edges heated with a match or lighter to smooth them down.

By using the catheter, the uncertainty of the presence of bacteria in the urine specimen falls away.

The catheter also contributed significantly in the more serious undertaking of a lumbar puncture. Here it could be connected to the needle by inserting a linkage into its larger end. Once

connected, it could be used to measure the pressure in the spinal fluid. CSF could then be dripped into tubes and onto culture plates more readily from the end of the pliable plastic tube and the sterility of the whole procedure was insured, (Fig 4).

Extracting mucus through a catheter from the nose of an infant who cannot breathe, is a very gratifying procedure.

The flimsy little tube once acquitted itself remarkably well when it had to stand in for a Foley's catheter that I did not have available. I had been called to see an elderly male patient with abdominal pain and had found a grossly distended bladder to be the cause of the discomfort. The well lubricated feeding tube slipped smoothly into the bladder and slowly emptied it.

Newborn babies are always greeted by my little catheter just after they have been delivered. Having examined them for all the more obvious congenital defects, I pass the tube down each nostril to make sure the nasal passages are open and into the stomach to determine the patency of the oesophagus.

I am sure that in different hands my very versatile catheter may be used for even more exotic purposes.

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