many were above the operational diagnostic cut off value? Can the authors provide the data on the total number of tests performed during the three month period of screening of every admission to the unit, and, assuming that on those occasions when cultures were not performed the blood cultures would in fact be negative, can they then provide a revised definition of sensitivity and specificity which would incorporate all the test results available?

PHILIP C ETCHES
NEIL F FINER
Royal Alexandra Hospital,
10240 Kingsway,
Edmonton, Alberta,
Canada T5H 3V9

- 1 Russell GAB, Smyth A, Cooke RWI. Receiver operating characteristic curves for comparison of serial neutrophil band forms and C reactive protein in neonates at risk of infection. *Arch Dis Child* 1992; 67: 808-12.

Dr Russell comments:

The indications for performing a septic screen were clearly listed as clinical signs or band count of >5% or C reactive protein >8 mg/ml. The I:T ratio was not used to prompt a septic screen but was calculated as part of the analysis of the results because the immature neutrophil:total neutrophil ratio is a more widely published index.

Band count and C reactive protein concentrations were determined daily ('serially') in babies at risk of infection. We assumed that a negative test would indicate the absence of infection. The *sensitivity* (true positive/true positive+false negative) and *specificity* (true negative/true negative+false positive) of the tests was calculated from the results obtained at the time of screening. The *true negative* count for the test was determined if the test and the culture were negative when the screen was performed as a result of another indication. The indication for the screen that produced a negative culture was therefore a *false positive* test.

Bands and C reactive protein more than the cut off levels prompted a septic screen in all cases even if no other clinical indication was present. Therefore all false positive results would be determined besides the true positive results. The *sensitivity at the time of the culture*, is therefore correct as it depends on the number of true positive and false negative results (test negative and positive culture).

Drs Etches and Finer seem to propose that for the calculation of specificity, account should be taken of all negative test results obtained during serial infection surveillance (even if cultures were not taken). We determined the test specificity only at the time of the culture to avoid a result based on the assumption of a negative culture. To obtain all true negatives during serial infection

surveillance would require that all the negative tests be confirmed by a negative 'gold standard'. This is clearly unethical when an extra invasive procedure such as a blood culture is required. In the calculation of test specificity the true negative count occurs in both the numerator and denominator, and therefore an increase in this factor would increase the calculated test specificity.

On the basis of these practical and ethical reasons we feel that the sensitivity and specificity we have calculated do not require further revision.

Recovery of Intralipid from lumbar puncture after migration of saphenous vein catheter

EDITOR,—I read with great interest the paper of Odaibo, Fajardo, and Cronin¹ on the migration of a saphenous vein catheter. On inspection of their fig 1 it is clear that the catheter tip is not in the left common iliac vein nor the inferior vena cava. The catheter tip lies lateral to the left pedicle of L4 or L5 (it is difficult to be certain which due to the poor quality reproduction of bony detail). The contrast medium injected runs a thin curvilinear streak round the inferior border and up the medial side of this pedicle.

If one observes the course of the catheter below its tip one can see an angular deviation of its course – initially upwards and medially and then upwards and laterally. This change of course is at the origin of the left ascending lumbar vein and the contrast medium is filling the vertebral venous plexus. In other words I am sure this catheter was never correctly sited

but from the start was in the ascending lumbar vein and migrated from there.

I do not wish to diminish the importance of the point the authors make about this unusual complication of using a venous long line, it is very important. But their paper really makes a further point – that is, if the catheter tip is not correctly sited initially problems are more likely to ensue.

R E J LEE
Royal Victoria Infirmary,
Queen Victoria Road,
Newcastle upon Tyne NE1 4LP

- 1 Odaibo F, Fajardo CA, Cronin C. Recovery of intralipid from lumbar puncture after migration of saphenous vein catheter. *Arch Dis Child* 1992; 67: 1201-3.

Please note that an error occurred in the paper by Odaibo *et al*; intralipid should have been Intralipid (Kabi Pharmacia).

Retropharyngeal abscess secondary to nasopharyngeal CPAP in a preterm neonate

EDITOR,—We would like to describe a previously unreported complication of nasopharyngeal continuous positive airway pressure (CPAP) that occurred on our unit.

A baby of 26 weeks' gestation weighing 910 g was treated with nasopharyngeal CPAP for apnoeas and bradycardias from day 9 of age. A 6 FG suction catheter was used to determine the required length prong (2.5 mm Portex ivory endotracheal tube) under direct vision. The treatment was successful until day 22 when further bradycardias ensued. Examination by direct laryngoscopy showed the terminal 1 cm of the prong had eroded into the pharyngeal wall, with associated erythema and swelling. Cultures from blood and base of the pouch created were negative but the infant did require intubation for five days and was treated with antibiotics to cover retropharyngeal abscess.¹

This case demonstrates a previously unreported complication of nasopharyngeal CPAP and has changed practice in our unit. We now use shorter prongs not designed to reach the pharynx and confirm that by direct visualisation. We feel that the suction catheter used to measure the distance may have kinked in the nose leading to an overestimate of the required length of the nasal prong. We hope this report will minimise the chance of any further cases developing.

S W JONES
Department of Paediatrics,
Southampton General Hospital,
Tremona Road,
Southampton SO9 4XY
J M KING
Princess Margaret Hospital,
Swindon SN1 4JU

- 1 Coulthard M, Isaacs D. Retropharyngeal abscess. *Arch Dis Child* 1991; 66: 1227-30.