

critical point of dissection, directly above the bifurcation of the portal vein and as far posteriorly as its posterior wall. Suruga has attributed improved results to the use of an operating microscope.<sup>17</sup>

Early surgery is of prime importance. Progressive cirrhosis will certainly be established by the age of 3 months and probably sooner. Sixty days is now regarded as the maximum age at which portoenterostomy can be carried out with any hope of arresting the disease, even if adequate bile drainage is achieved. Hence time is limited. In the newborn child with persistent jaundice the main problem is distinguishing between neonatal hepatitis and biliary atresia. A battery of tests is available to differentiate between hepatocellular disease and ductal obstruction, but since the conditions overlap these cannot provide an unequivocal diagnosis. This requires liver biopsy and an operative cholangiogram—a simple procedure that should be carried out at the beginning of the investigations and not at the end. If the clinician yields to the temptation of embarking on new and exotic liver function tests he may delay surgical treatment and so allow the onset of irreversible, progressive cirrhosis.

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## Dissolution of renal stones

The treatment of patients with urinary stones has two aspects: firstly, dissolving or surgically removing stones already lodged in the urinary tract; and, secondly, preventing recurrence. Generally, recurrence of most types of stone should now be preventable with dietary and medical measures. Dissolution of existing stones, however, is much more difficult, since the urine has to be made undersaturated with the salt or acid concerned continuously for several days or even weeks. This is feasible in the case of cystine, uric acid, magnesium ammonium phosphate, and even calcium phosphate stones; but it is extremely difficult with calcium oxalate stones,<sup>1</sup> which are the most common of all urinary calculi.

The main alternative to dissolving the stone is surgical removal. This may be necessary if there is ureteric or intrarenal obstruction. With most types of operation, however, there is a high risk of recurring stones.<sup>2-4</sup> The exception appears to be partial nephrectomy, usually of the lower pole,<sup>5,6</sup> but the operation has been criticised as being unsuitable for most renal stones because renal tissue is lost without any proved benefit to the patient.<sup>7</sup> Furthermore, all surgical operations carry a risk of introducing infection.<sup>8</sup>

Among some more exotic methods reported in recent years for eliminating stones from the urinary tract are mechanical vibration of the patient,<sup>9</sup> ultrasonic lithotripsy (first reported in dogs<sup>10,11</sup> but later in patients<sup>12</sup>), and ureteral<sup>13-16</sup> and intrarenal irrigation.<sup>17-20</sup> In the irrigation procedures solutions (based on citric acid or ethylene diamine tetra-acetic acid or both) able to render calcium and magnesium salts soluble are perfused through the urinary system. The techniques used so far include retrograde catheterisation,<sup>13-16</sup> insertion of a nephrostomy tube after pyelolithotomy,<sup>17-19</sup> and percutaneous nephrostomy.<sup>20</sup> By these procedures phosphatic,<sup>13-20</sup> cystine,<sup>21</sup> and uric acid stones<sup>22</sup> can be dissolved—calcium oxalate stones remaining the most refractory. Some of the advantages claimed for the technique are the direct contact between the solvent and the stone, the minimal dilution of the solvent during the normal course of urine production, and the relative ease with which the kidney may be irrigated by nephrostomy.

Despite reported successes, however, irrigation is not widely used. The main reasons seem to be that treatment has to be continued for between one and four weeks; adequate lavage often proves difficult to provide and maintain; blockage of the catheters by fragments of stone may be a problem; and, finally, surgical nephrostomy requires the same general anaesthesia and exposure of the kidney as pyelolithotomy or nephrolithotomy, and therefore offers no real advantage over surgical removal of the stone. Complications arising from irrigation include infection of the urinary tract,<sup>16</sup> local intolerance of the irrigating fluid,<sup>23,24</sup> tissue damage leading to renal failure,<sup>25</sup> and hypermagnesaemia.<sup>26</sup>

More recently, percutaneous nephrostomy has been developed to allow catheters large enough for adequate irrigation and drainage to be introduced directly into the renal collecting system.<sup>20</sup> This removes the need for open surgery and general anaesthesia and avoids the problems of ureteral catheterisation. Urologists using this technique, however, have been at pains to point out that it should complement surgical removal rather than compete with it. Percutaneous nephrostomy is most appropriate for patients unfit for surgery and those who have previously undergone multiple renal operations. The scope of the technique, however, will be severely limited so long as the available irrigation fluids do not dissolve calcium oxalate. Preparations containing salts of ethylene diamine tetra-acetic acid are said to be more effective for this,<sup>21</sup> but they may cause severe pain.<sup>16</sup> Until these problems are overcome irrigation techniques for dissolving stones are unlikely to supersede more conservative forms of treatment.

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## Premature breech: vaginal delivery or caesarean section?

Few problems in obstetric practice demand finer judgment, more experience, or greater manipulative skill than breech delivery, and this is especially true when the baby weighs less than 2500 g. In recent years many obstetricians have come to regard labour with a small breech baby as carrying a high enough risk to warrant caesarean section.<sup>1-4</sup>

The obstetrician's concern is that the relatively large aftercoming head may be trapped by an incompletely dilated cervix, or that the cord may prolapse, or the child be damaged by trauma and asphyxia.<sup>1</sup> Furthermore, new techniques in neonatal intensive care have dramatically improved the prognosis for small, premature infants,<sup>5-6</sup> and—understandably enough—the obstetrician wants to hand the baby to the paediatrician in the best possible condition so that full advantage can be taken of these new skills. Even among babies weighing as little as 850 to 1000 g survival rates of 35 to 55% have been reported,<sup>6-12</sup> and some centres have claimed normal development in 90% of survivors.<sup>5-10</sup> But in these circumstances the decision between elective caesarean section or allowing labour to proceed is anything but straightforward and has received little critical attention.<sup>1</sup> From their study of premature breech delivery Karp *et al*<sup>1</sup> concluded that vaginal delivery can be undertaken safely when the presentation is either a full or frank breech—the buttocks presenting with the legs either flexed or extended. Forty-eight patients with full or frank breech presentations were permitted to continue in labour and 47 delivered by the vaginal route; there was no immediate evidence of damage to the babies. In contrast, they found that premature footling breech infants, especially those weighing between 1000 and 1500 g, were best managed by caesarean section because of the risks of prolapse of the cord and entrapment of the aftercoming head.

The high incidence of severe congenital anomalies among premature breech infants—in the 66 cases studied by Karp *et al*<sup>1</sup> it was 18%—is another factor that obstetricians should take into account in choosing between caesarean section or vaginal delivery. Faced with a patient in premature labour a doctor may have too little time to marshal the facilities required to exclude some of the more important anomalies. Nor can the obstetrician be certain of the baby's weight. Though ultrasonic measurement of the biparietal diameter may be helpful, it is not infallible,<sup>13</sup> and the true gestational age may also be uncertain. These "unknowns" make the problem much more difficult.

This important and complicated clinical decision merits more extensive, prospective study on a collaborative basis.<sup>1</sup> Ideally, the obstetrician should know the precise weight and gestational age of the baby as well as the type of breech

presentation and the mother's pelvic measurements; and the safety of labour should be increased by continuous fetal heart rate monitoring and periodic fetal blood sampling. Some of this information will, however, be difficult or even impossible to obtain. Any prospective study will have to be carried out in selected centres where there is close collaboration with neonatal paediatricians and the opportunity to carry out long-term follow-up studies on the surviving children.

In the face of so many unknown factors, it is hardly surprising that some obstetricians should opt for caesarean section in the belief that this is best for the baby. But what of the mother? Caesarean section carries certain immediate and long-term risks for her, and the obstetrician must take these into account when he decides between vaginal or abdominal delivery. For the present he should give serious consideration to the recommendations of Karp and his colleagues<sup>1</sup> that, after every reasonable effort has been made to exclude congenital anomalies, footling breeches should be delivered by caesarean section, while full and frank breeches should be delivered vaginally unless there is some clear, complicating factor.

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## Monitoring devices and septicaemia

Indwelling venous catheters are an important cause of hospital-acquired or nosocomial septicaemia.<sup>1-4</sup> Infections caused by relatively avirulent Gram-negative micro-organisms now account for a sizable proportion of infections in patients requiring long-term hospital care, and this kind of sepsis is frequent after catheterisation of the large central veins, especially when this route is used for feeding.<sup>5-6</sup> Sepsis occurs more frequently if blood is withdrawn through the catheter, and if infection is to be kept to a minimum it must be used for no purpose other than to administer parenteral nutrition. Clear guidelines have been laid down for the establishment and care of such feeding systems.<sup>7-12</sup> Yet, despite the experience gained with central venous catheters, nosocomial infection originating from arterial catheters, and in particular from contamination of arterial pressure monitoring devices, has been largely unappreciated until recently.

Fibrin begins to form around indwelling catheters within 24 hours of their insertion and complete sleeves are established within five to seven days.<sup>13</sup> These sleeves predispose to thromboembolism and serve as an intravascular nidus for the proliferation and dissemination of micro-organisms.<sup>5-14</sup> Arterial pressure transducers seem especially prone to contamination by micro-organisms, and this may lead to frank infections with