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Vacuum extraction or forceps?

The vacuum extractor or ventouse was designed by Malmström and introduced into Sweden in 1954.[1] The instrument quickly became popular among Swedish obstetricians, and by 1960 more deliveries were being carried out by vacuum extraction than by forceps. For the past two decades the ventouse has been the instrument of choice for vaginal operative delivery in Sweden, and in many clinics forceps have been relegated to history. The Swedish Birth Statistics Register shows that the incidence of vacuum extractor deliveries increased from 4·2% in 1973, when nationwide statistics became available, to 6·7% in 1983. Some of this increase was due to the increase in epidural blocks during the same period—from 0·9% in 1973 to 16·0% in 1983. In the same period deliveries by caesarean section increased from 5·3% to 12·2%, whereas forceps deliveries remained rare—0·2-0·3%.

The Malmström instrument, with its centrally attached suction tube, was subsequently modified by Bird, who placed the suction tube laterally on the cup.[2] This modification improves the manoeuvrability of the instrument and permits optimum application with the centre of the cup directly over the posterior fontanelle.[3] Malmström initially suggested that the vacuum extractor should be most useful during the first stage of labour in patients with uterine inertia, but his colleague Fjällbrant (who worked in the same department in which the vacuum extractor was introduced) reported 10 failed extractions using the ventouse among 90 women with the fetal head high in the pelvis.[4] These failures were mostly due to relative fetopelvic disproportion, and some of the infants had serious injuries. Other reports also described serious damage to the scalp with necrosis and infections after the vacuum extractor had been applied for a long time. These reports led to a change in policy: nowadays caesarean section is used instead of the vacuum extractor when the fetal head is high in the pelvis.

Chalmers and Prakash reported the successful use of the ventouse in 87% of 201 women in the first stage of labour.[5] Their data showed that when the cervix was dilated less than 7 cm the extraction time tended to be long, and the vacuum extractor was unsuccessful in four of nine women. They concluded that the extraction time should be restricted to 30 minutes. A further recommendation arising from this and other studies is that vacuum extraction should not be undertaken when the fetal head is above the level of the ischial spines. In primiparas the cervix must be almost fully dilated, whereas in multiparas with a soft cervix the vacuum extractor may be used after 6-7 cm of cervical dilatation.

Strictly comparative studies of the merits and drawbacks of forceps and vacuum extraction are difficult to perform since the ideal conditions for randomised comparison—namely, the participation of operators equally well trained in both methods of instrumental delivery—are virtually impossible to achieve in practice. Nevertheless, all studies have shown that the incidence of trauma to the birth canal is higher in forceps delivery.[6-8] Opinions differ on the risk of fetal trauma. Despite the fact that in many countries vacuum extraction has been the standard method of operative vaginal delivery for decades, doubts are still expressed about its benefits because of possible adverse effects on the fetus's head. Some series have reported a high incidence of retinal haemorrhages,[9,10] and others have described skull fractures and subdural and subgaleal haematomas.[11] In evaluating such reports, however, we need to know the indications for operative delivery, since fetal asphyxia or longlasting labour might themselves have influenced the condition of the newborn at birth. Leijon compared the neurological behaviour of newborn infants after vacuum extraction and spontaneous delivery.[12] Those delivered by vacuum extraction showed lower visual and auditory responsiveness than infants of the control series, but the infants delivered by vacuum extraction had experienced longer labours and a higher frequency of occipitoposterior positions than the control group. In another randomised study, in which operative delivery was restricted to maternal indications, a comparison of the effects of forceps and vacuum extraction on newborns showed no differences either in the incidence of retinal haemorrages or in the neurological state on the first and fifth days of life.[13]

Jeannin *et al* used ultrasound techniques to study the intracranial structures during the early neonatal period in 28 non-hypoxic infants delivered at term by mid-pelvis vacuum extraction.[14] All the findings were normal. Most studies have found that mild neonatal jaundice (probably due to an increased incidence of cephalhaematomas), minor scalp abrasions, and subgaleal haematomas are more frequent after vacuum extractor extractions than after forceps deliveries.[11] A well planned, randomised study by Vacca *et al*, however, found no difference in the incidence of neonatal trauma

between deliveries by forceps and those by vacuum extraction,[8] though mild neonatal jaundice was still more frequent in the vacuum extractor group. In a long term follow up comparison at the age of 4 of 101 children delivered by vacuum extraction and a matched control group of infants delivered spontaneously Bjerre and Dahlin found no differences in psychomotor development and neurological features.[15]

The evidence shows, then, that maternal complications are unquestionably less severe after vacuum extraction than after forceps deliveries. Vacuum extraction may be used for mid-pelvis extraction as an alternative to caesarean section and is preferable to forceps in occipitolateral positions, since the head often rotates spontaneously during vacuum extractor extraction. In deliveries by vacuum extraction the mother takes an active part by bearing down during extraction, and this might also contribute to her positive emotional experience of the delivery. The hazard with vacuum extraction is that since the instrument is so easy to apply it may be used uncritically to hasten delivery. If it is used when the presenting part is high in the pelvis the extraction time may become too long, which increases the risk of serious scalp abrasions, neurological complications, and neonatal infections. In outlet extractions with the fetal head in the occipitoanterior or occipitoposterior position forceps delivery seems to be as suitable as delivery by vacuum extraction—but only in the hands of a trained obstetrician.

Should the vacuum extractor substitute for the forceps in everyday obstetrics younger obstetricians would still need to be trained in handling both instruments. In certain conditions—including premature deliveries and the aftercoming head in breech presentation—and in those deliveries in which the parturient is unable to participate the forceps remains the correct instrument.

GUNNAR RYDÉN

Head of Obstetric Division,
Department of Obstetrics and Gynaecology,
University Hospital,
581 85 Linköping,
Sweden

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Doctors and torture

The political conditions which lead to doctors participating in the abuse of human rights may be seen all too clearly under the oppressive regimes of some South American states. The Collegio Medico de Chile (Chilean Medical Association) has recently suspended two doctors for their involvement in torture, and late last year it held an international meeting on human rights attended by representatives of the medical associations of other countries. This week will also see the launching in Britain of the Medical Foundation for the Care of Victims of Torture (p 142).

At the time of the overthrow in 1973 of the government of Dr Allende, a former president of the Collegio, human rights were not mentioned in the code of medical ethics—because no one thought it necessary. There may have been serious economic and social problems, but democratic rights were respected and the rule of law was enforced.

The right wing take over in 1973 changed all that, and the concept of "national security" was born. The paramount need to eliminate "the basic cancer of marxism" was held to justify suspension of constitutional freedoms, with alternate phases of "siege" and the marginally less oppressive phases of "emergency." Not only those suspected of marxist tendencies but also their relatives, friends, and contacts have been taken from their homes and tortured to obtain information or banished to remote parts of the country. Children are not exempt: in 1984 the secret police arrested at least 455 children under 16, of whom 16 died and many more have permanent disabilities from gunshot wounds and head injuries. The rehabilitation of victims of torture, especially of children, is one of the problems confronting the Collegio. Another problem is rape, which is rare in Chile except in assaults by the civil and military police. Doctors' daughters have been included among their victims. Fear of reprisals, shame, and the fact that there are few facilities for treating the immediate aftermath of rape had led to many cases going unreported; in these circumstances both infection and pregnancy have occurred. Abortion is illegal.

The high sounding resolutions against brutal and inhuman treatment that come from the United Nations and other international organisations are in stark contrast to their ineffectiveness in Chile. Amnesty International claims that torture is occurring in more than half the countries of the world. Electrical apparatus used for torture in Chile is said to have been manufactured in England and Japan. How sincere are the "protesting" governments? The many non-governmental organisations are more effective, but their activities are fragmented and incoordinated.

The World Medical Association (notwithstanding its declaration on the issue) has been so ineffective that the Uruguayan Medical Association has decided to join the long list of those who have left that discredited body. It was noticeable that neither the WMA nor its most influential member, the American Medical Association, was present at the conference, although the World Psychiatric Association and the American Institute for the Advancement of Science were strongly represented.

The BMA's working party on torture set up as a result of the resolution passed by the annual representative meeting in 1984 will soon have finished its task, and its report can be expected to refer to what has now become known as the