

# EVALUATION OF THE ROLE OF CRANIOTOMY IN DEVELOPING COUNTRIES

Pages with reference to book, From 30 To 32

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## ABSTRACT

A review of 32 cases of craniotomy performed at the Jinnah Postgraduate Medical Centre Karachi, over a period of 6 years from January, 1984 to December, 1989 is presented. Total number of deliveries during this period were 37,682. Frequency of craniotomy was 0.08% i.e., 1 in 1177 deliveries. Of these 32 craniotomies, 28 were done on non-deformed dead fetus, 16 because of obstructed labour, 7 in cases of after coming head of breech and Sin failure to progress in second stage of labour. Four cases were of live hydrocephalic fetus in whom cephalocentesis was done followed by craniotomy due to failure to progress in labour, Maternal morbidity was 12.5% with no maternal death. We conclude that it is safe and quicker than caesarean section in selected cases. Though unpleasant to perform, is of great relief to the patient and her family (JPMA: 43: 30, 1993).

## INTRODUCTION

In developing countries, craniotomy can be a useful technique in selected cases where the fetus is dead in utero due to obstructed or prolonged labour. This destructive technique can save the patient and can be applied in place of a caesarean section. A caesarean section may be unjustified in a woman who is desperately ill, has sepsis and probably moribund with a dead fetus<sup>1</sup>. It is especially useful in patients who come from rural areas and run the risk of rupture of uterine scar during subsequent pregnancies or labour because of either their reluctance to go to the hospital, or improbability of reaching the hospital for various reasons. In developed countries, this procedure is obsolete because of the rarity of the obstructed labour. Moreover, the patients would get medical attention long before such a critical situation is reached. The purpose of this study is to review the applicability, acceptability, indications, morbidity and mortality associated with craniotomy.

## PATIENTS AND METHODS

All craniotomies done during the years 1984-1989 were analyzed. Their ages, parity, duration of labour, mode of delivery, fetal weight, complications and maternal morbidity and mortality were recorded. In addition, the same information about patients who had stillbirths during the same period were obtained from their case records. The method of craniotomy was similar to that described by Lister<sup>3</sup>. The procedure was performed in the operating theatre under local or general anaesthesia. The patient was placed in lithotomy position and the bladder emptied by catheterization. All patients had recorded findings of vaginal examination to determine the exact station and position of fetal head, caput, degree of moulding and degree of dilatation of the cervix. Assessment was made to determine if craniotomy was feasible or not. If it seemed unlikely, then caesarean section was done. The operative technique was standard in all cases. For head presentation the fetal head was stabilized by an assistant suprapubically and perforator or long straight scissors were introduced by the surgeon through the skull bone. Brain tissue was evacuated with sponge holding forceps or delivered piecemeal digitally. Volself-lum or Allis forceps were applied to the skull bone and the head delivered by traction or forceps. In

breech presentation the perforator was introduced through the foramen magnum or in the neighborhood of posterolateral fontanelle whichever was easily accessible. Rest of the procedure was then similar to as described above.

## RESULTS

During the period of 6 years from January, 1984 to December, 1989 a total of 37,682 deliveries were performed. Out of these 2,935 were stillbirths. Craniotomy was done on 32 fetuses. Frequency of craniotomy was 0.08% of the total deliveries, i.e., 1 in 1177 deliveries while the frequency of stillbirth was 1.09%, i.e., 1 in every 91 deliveries. The frequency of craniotomy in stillbirths is 1.1%. All patients were un-booked emergencies. Age of the patients ranged between 18-35 years, with a mean of 27 years. Parity ranged from primigravida to 8th gravida. Majority were between 5- 8th gravida. The duration of labour was between 12 hours to 7 days. Fetal weight ranged between 2.8-4.2 kg with a mean of 3.4 kg. Mode of delivery in stillbirth was vaginal in 2,615 and lower segment caesarean section in 320. Thirty-two vaginal deliveries were done after craniotomy. Ratio of craniotomy to caesat mean section was 1:10. Indications for craniotomy in the 32 cases were obstructed labour (16 patients), failure to progress in second stage of labour due to borderline cephalopelvic disproportion (5 patients), after coming head of breech (7 patients) and in 4 patients cephalocentesis was done first for hydrocephalous, labour did not progress hence craniotomy was performed. Of the patients who required craniotomy, 10 were primigravida (31.2%), 12 were between 1 and 4 gravida (37.5%) and 10 patients were between 5 and 8 gravida (31.2%). The overall maternal morbidity due to craniotomy was 12.5%. Complications included cervical tears (2 patients), vaginal tear (1 patient), total abdominal hysterectomy (1 patient) due to primary postpartum haemorrhage. Uterine rupture was suspected in one patient before delivery which was subsequently attributed to the obstructed labour. There was no maternal mortality.

**TABLE. Comparison of complications of C.S. vs craniotomy.**

Complications	C.S. (n = 320)	Craniotomy (n = 32)
Maternal death	7	0
Vaginal tear	0	1
Cervical tear	0	2
Ruptured uterus	0	1
P.P.H.	0	1
Wound dehiscence	12	0
Wound infection	55	0
Sepsis (pyrexia)	100	0
Paralytic ilea	14	0

**C.S. = Caesarean section.**

Table shows comparison of the complications after caesarean section and craniotomy in patients with stillbirths.

## DISCUSSION

The incidence of craniotomy in different units of developing countries depends on the clinical material and management policy for patients who arrive late in obstructed labour with dead fetus. Aimakhu<sup>2</sup>

reported an incidence of 0.75% craniotomies in 1,344 stillbirths. Otolorin and Adelus<sup>4</sup> had an incidence of 0.30% in 1,307 stillbirths while Osato et al<sup>5</sup> reported 0.17% in all deliveries conducted over a period of 8 years. In our series the incidence of craniotomy was 0.08% of all deliveries conducted over a six year period. This is 1.09% of 2,935 stillbirths during the same period. In the past, craniotomy was often done and justified in patients with obstructed labour with dead fetus as caesarean section was considered to be a lethal operation<sup>6</sup>. In developed countries it is of historical interest only and is considered to be an antique operation<sup>7</sup>. In a developing country, good obstetrical care is still not easily available and is far from satisfactory for the majority of the population. Large number of patients with complications of labour get referred to a tertiary care hospital. Most of these patients, however, arrive too late because of the long distances, inadequate transport facilities, lack of funds and even obsession for delivering at home thinking it is a normal process for a woman. Most of these arrive in obstructed labour with dead fetus and poor maternal condition. They have often been dealt by unskilled and ill trained local women for unreasonably long periods before being abandoned. In this group of patients craniotomy is very much applicable and useful in selected cases by experienced personnel. The patient who was suspected to have uterine rupture had come from home, having been in labour for 12 hours. An untrained person had delivered the baby with breech presentation fill the neck. On arrival in the labour ward the fetal body was hanging out up to the nape of the neck. She complained of suprapubic pain. Her general parameters were normal apart from slight suprapubic tenderness. Craniotomy was performed easily. On uterine exploration after delivery, uterine rupture was found for which laparotomy was carried out. One patient came in with rectovaginal and vesicovaginal fistula. She had been in labour for 7 days before presenting to the hospital. Craniotomy was carried out without much difficulty, fistulae were repaired 3 months later. The choice of craniotomy has to be decided after carefully assessing the risks of long anaesthesia and operative complications associated with caesarean section in a septic and severely, ill patient compared to craniotomy which is comparatively a very quick and safe procedure which can often be performed under local anaesthesia only. In our experience caesarean section in septic patients often results in wound dehiscence. The subsequent uterine scar call also be weak with the attendant risk of uterine rupture in subsequent pregnancies and labour. From our experience it seems that craniotomy is of value in places which deal with a large number of cases of obstructed labours and intrauterine deaths due to lack of adequate antenatal care, hence it should not be abandoned totally. Even if it has no place in modern obstetrics, it remains an important weapon in the armoury of the third world obstetrician<sup>8</sup>. It is hence necessary for all doctors practising in developing countries to be aware that craniotomy can be a very gratifying and useful procedure.

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