

PLACENTA PRAEVIA MANAGEMENT IN THE LAST CENTURY

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Placenta praevia is nowadays managed by Caesarean section in most cases, and only in the marginal or lateral placenta praevia is vaginal delivery considered. The situation was very much different in the past, when the mortality associated with the operation prohibited the use of Caesarean section in the management of placenta praevia. The maternal mortality following section in 1888 was reported (18) at 54-62%, while that following complications of placenta praevia was lower at 30% (17). The parental mortality following vaginal delivery in cases of placenta praevia was 50-74% (17). Caesarean section for placenta praevia was recommended in 1898 by Lawson Tait (19) but acceptance only gained ground slowly. In 1923, it was noted (5) that "the performance of Caesarean section for cases of placenta praevia is being overdone." As late as 1951 (1) Caesarean section was noted to be contra-indicated if the patient had been examined vaginally in her home, or after a pack had been inserted in to the vagina, or if the child was too premature. It was considered the method of choice in elderly primigravida, total placenta praevia and in those cases of partial placenta praevia in which the cervix was long and closed. The reduction in foetal mortality was only brought about after Macafee (11,12) introduced the conservative antenatal management of placenta praevia with the aim of allowing the pregnancy to continue until the fetus has a chance of survival ex utero.

Progress in Midwifery on the Maltese Islands followed closely that on the continent. The first recorded Caesarean section was performed by

Professor G.B. Schembri on the 28th May 1891 (15) on a woman who had cephalopelvic disproportion resulting from a rachitic pelvis, though other Maltese obstetricians as early as 1804 had recommended abdominal delivery to save the mother and child (3). The management of placenta praevia did not include abdominal delivery. In 1883 Prof. S. L. Pisani in his lectures to student midwives told his class that whenever the placenta delivers first, this must be inserted in tepid water until the arrival of the medical practitioner (14). In 1896 Prof. G. B. Schembri in his textbook for midwives (16), advises his students to manage the condition by bed rest and immediate recourse to medical help. A vaginal plug could be used until the arrival of the medical practitioner. The vaginal plug was made from several pieces of medicated cotton wool separately tied with a thread. The lumps of cotton wool are used to plug the vaginal canal completely, the threads being left hanging outside the vulva. To avoid turning an external haemorrhage into an external one, an abdominal binder made of crumpled napkins was bandaged over by a tight bandage.

In 1938 (7), Prof. Jos. Ellul described the management of placenta praevia in use at the time. "The routine treatment is to perform the classical tamponage when the cervix is closed; Caesarean section is preferred in certain primipara with a closed cervix and severe haemorrhage when there is an interest in saving the baby's life. In lateral and marginal cases, rupture of the membrane is performed and a pressure bandage applied over the abdomen. These cases are often delivered spontaneously. In other

cases when bleeding continues the pulling down of a leg with a 2 lb weight (after internal or Braxton-Hicks version) or the use of Willet's forceps on the caput have been found very satisfactory." That year there had been twelve cases of placenta praevia delivered in the hospital. Five of these were more or less central, two marginal and five lateral. None of the cases were delivered by Caesarean section. Four of the central placenta praevia were complicated by puerperal sepsis and are described. Three of these cases were delivered by internal version and breech extraction, while one case was managed by Braxton-Hicks version and the application of a weight to the foot. Two of the cases of lateral and one of the marginal placenta praevia were similarly associated with puerperal sepsis. There were no maternal deaths from placenta praevia in the hospital, but many infants were sacrificed. Five babies were stillborn and two died a short time after birth. The Caesarean section rate at the Central Hospital at Floriana in 1937-38 (6,7) stood at 4.4% of all deliveries, the abdominal deliveries being performed for cephalopelvic disproportion (24 cases), ruptured uterus (7), and postmortem (1). The classical Caesarean section was the most frequent operation performed (18 cases: 56.3%). The lower segment approach was performed in 3 cases (9.4%). Porro's Caesarean hysterectomy was performed in 9 cases (28.1%), while Portes operation was used in 2 cases (6.3%). Portes operation, involving exteriorisation of the uterus, was limited to those cases where sepsis was advanced, or when the uterine rupture was small and it was desirable to preserve the

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uterus. The mortality rate associated with surgery stood at 31.3%. During the same two-year period, four deaths attributed to complications of placenta praevia were reported from the Maltese Islands accounting for 4.9% of all registered maternal deaths with a specific mortality rate of 21.95 per 100,000 births.

Fifteen years later in 1951-52, 9 cases of placenta praevia were delivered by Caesarean section accounting for 12.0% of all sections performed at St. Luke's Hospital at Gwardamangia (8,9). Caesarean section in the hospital was undertaken in 6.8% of all deliveries and was associated with a mortality of 2.7%. The lower segment Caesarean section was the commoner approach (48: 61.0%) with the classical approach being performed in 15 cases (20.0%) and Porro's hysterectomy in 12 cases (16.0%). During the same period, 3 cases of placenta praevia were delivered after the application of Willett's forceps to the scalp, while the application of weights to the leg after internal version was reportedly used four times (Babies Labour Ward Register 1951-52). Two maternal deaths followed haemorrhagic complications from severe placenta praevia accounting for 16.7% of maternal deaths occurring in the hospital. There were thirteen fresh stillbirths and two neonatal deaths following complications of placenta praevia accounting for 6.7% of perinatal deaths occurring in the hospital (8,9).

A number of methods, other than Caesarean section, were thus available to the obstetrician to control haemorrhage and accelerate delivery. These methods remained in use long after Caesarean section became a reasonably safe alternative in the management of placenta praevia.

Classical Tamponage

Classical tamponage was first mentioned in Maltese medical literature in 1896 as a temporary measure to control blood loss by the attending midwife until the arrival of

the medical practitioner (16). By 1938 the use of this method appeared to have become routine whenever the cervix was closed (7). By 1951, standard obstetric textbooks (1) justified this method only in infected cases which have too little cervical dilatation to permit the employment of one of the other vaginal methods, and as a temporary expedient to check dangerous haemorrhage pending the institution of alternative management. For efficient application, an anaesthetic is required and a firm abdominal binder is first applied. A large Sim's speculum should be used. At least fifteen yards of twelve-inch moist sterile roll gauze are required and the upper part of the vagina must be tightly packed if the plug is to be effective. The gauze should be soaked in a suitable antiseptic (acroflavine or chlorhexedine solution), and prophylactic antibiotics should be prescribed. The firm tampon in the vagina controls the haemorrhage and favours dilatation of the cervix. It is never safe for the pack to remain in situ for more than 8 hours, and if labour does not ensure within a few hours, the risks of sepsis are enormous (1,2,10). When this method was in general use at the Central Hospital in

Malta, the choice of antiseptics was limited. Acriflavin and Dettol were the only local antiseptics available in 1938 (7), these being used routinely to prevent and treat puerperal sepsis. Sulphanilimide was first tried in Malta in 1935 with encouraging results, but only came in general use in 1937. Sulphapyridine appeared in 1938-39, while penicillin was first administered to civilians in 1945 (4).

Continuous Traction on the Foetal Head

Willett in 1925 (20) designed a special pair of forceps with which to grasp a fold of the scalp tissues and draw the head down onto the placental site, the membranes having already been ruptured. Continuous traction by attaching the forceps to a small weight of 1-2 lbs could be applied. Considerable trauma to the scalp may result. After the description of the vacuum extractor by Malmstrom in 1957 (13), an alternative method of grasping the foetal scalp was through the use of the smallest cup of the ventouse (2). Willett's forceps appear to have quickly gained favour in Malta, so that by 1938 their application

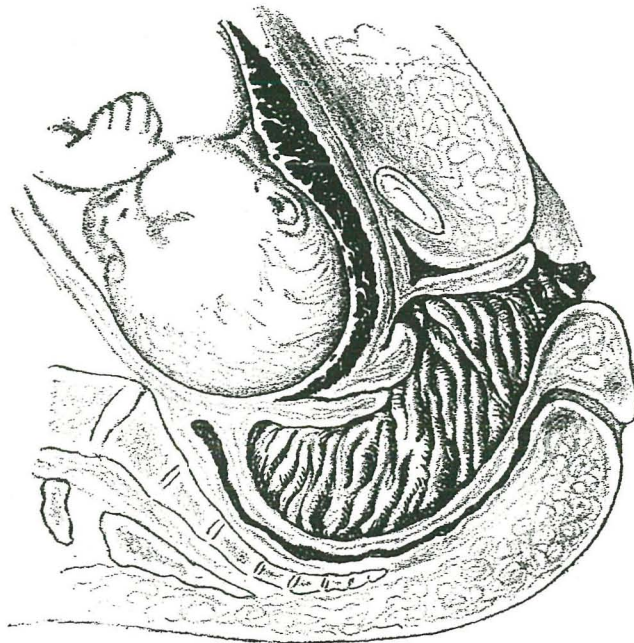
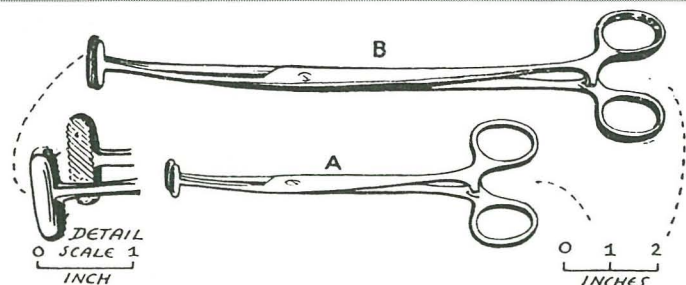


Figure 1. Haemorrhage controlled by the use of a gauze tampon in the vagina.

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Willet's scalp forceps. A. Short pattern. B. Long pattern.

to the caput was one of the standard methods of managing placenta praevia (7). Their use continued until the 1950's (8,9) and were only slowly replaced when Caesarean delivery became a much safer alternative.

Pulling Down a Leg

The procedure of podalic version and breech delivery was the save-all for many obstetric problems and was the method of choice described for the management of placenta praevia in 1888 (17). The use of the fillet for applying traction in cases of breech presentation was described by Dr. Butigieg in his lecture notes to medical students dated 1804 (3), though he does not apparently specify their use in placenta praevia. Podalic version continued to play an important part in the management of placenta praevia until Caesarean section became a safer

alternative. The procedure can only be performed if the patient is in labour. It is an effective method of controlling bleeding by compressing the placental site with the half breech and will after an interval excite labour pains. If the cervix is sufficiently dilated internal version is performed, otherwise external version or bipolar podalic version (Braxton-Hicks version) will be necessary. Having pulled down a leg, the pressure of the half breech is usually sufficient to arrest further bleeding, but if not, a weight of 2-3 lbs may be applied by means of a clove-hitch formed in a length of a strong roll gauze to the child's ankle (1,2,10). The foetal mortality of this procedure was prohibitively high and infants were routinely conditionally baptised on the foot as soon as this was brought out of the vulva (Babies Labour Ward Register 1956-57, Victoria Hospital, Gozo).

Hydrostatic Bag

On the same principle of controlling bleeding as the pulling down of a leg in cases of placenta praevia, a large hydrostatic bag, such as that of Champetier de Ribes was introduced into the uterus. A small weight could be attached to produce the desired pressure (1). This method does not appear to have gained ground in Malta.

In general the methods in force to control haemorrhage and facilitate early delivery required the application of traction either to the Willett's forceps applied to the scalp, or to the infant's leg brought down into the vagina. The application of this traction was continuous and may last for a few hours. Ian Donald in 1959 (10) suggested that the weight should be suspended over the foot of the bed, while Alfred C. Beck in 1951 (1) advised that care must be taken to allow for free play of the attaching cord when the patient moves, otherwise the tension may be sufficient to cause rupture of the uterus through the friable placental site. Alan Brews in 1963 (2) advised continuous traction by a cord passing over a pulley. A simple pulley system was in use in Victoria Hospital, Gozo. This

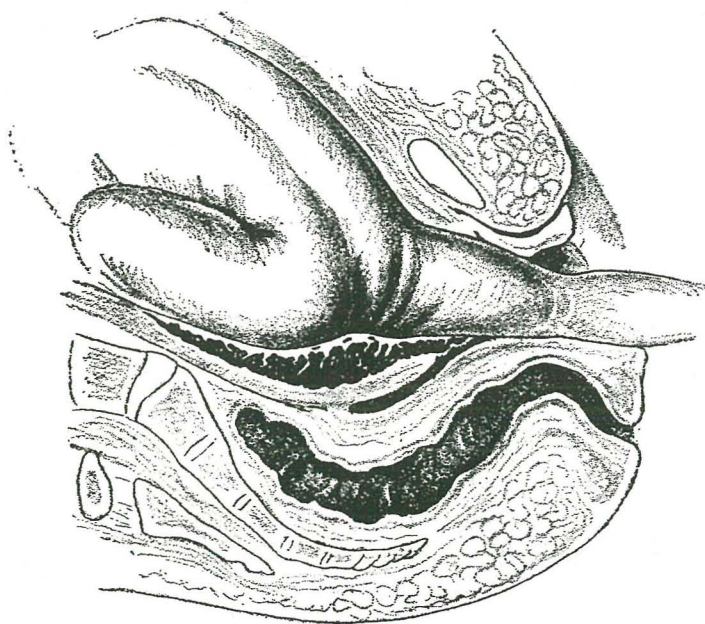


Figure 2. Haemorrhage controlled by Braxton Hicks version.

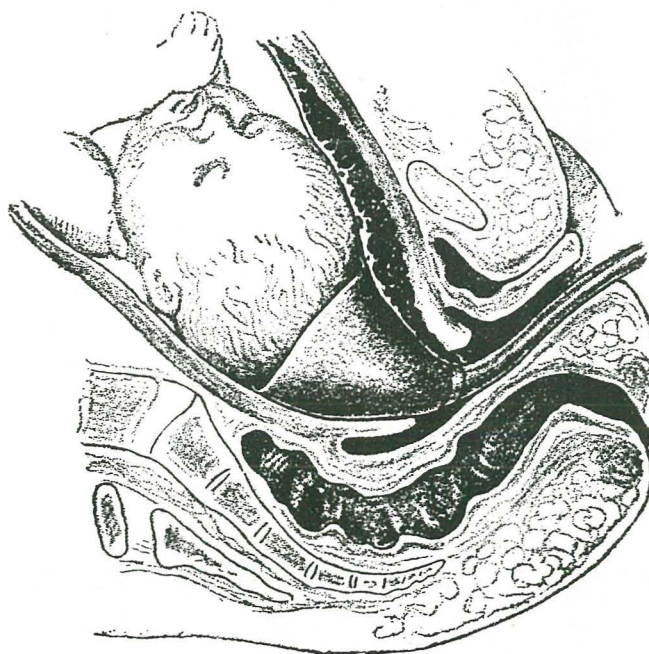


Figure 3. Haemorrhage controlled by the use of an intraovular bag.

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involved the adaptation of a normal chair with re-enforcement of the back with an attached wooden bar.

Perpendicular to this, was attached an iron bar at the end of which was a pulley. The chair was placed at the foot of the patient's bed and the cord attached to the infant was passed over the pulley to a sterile bag into which a 2lb weight was placed. The weight allowed for continuous traction while the infant's presenting part was kept warm by the application of heated towels until delivery. Cases which underwent this management in 1938 have been described (7). Version followed by the application of weights was used for a variety of indications other than placenta praevia. The procedure had a very high foetal and maternal morbidity.



Photo of the chair used in Gozo for applying continuous traction to presenting part – the specially reinforced back can be seen (Photo: Author).

The recorded uses for version followed by the application of weights in 1938 (7) included:

Placenta praevia - "Central placenta praevia. Modest haemorrhage. Braxton-Hicks version, weight applied to foot. Temperature 100.5F by the evening. Streptocide was started but temperature kept rising during the next 48 hours to 101.5F. On the third morning the temperature was normal, only to rise again to 101F. Hobbs treatment was given with some success. It was repeated on four other occasions. On the fourteenth day the temperature dropped to normal but went up again to 101F by the evening. Hobbs was repeated with good result. Patient was discharged well 4 weeks after delivery."

Accidental haemorrhage - "One case deserves special mention. Internal version was performed and a light weight was attached to the leg which was covered with a warm towel. The haemorrhage was stopped and birth took place spontaneously after four hours. The baby was alive and well."

Unengaged head - "C.S. Aged 39 years. Multipara (8). Admitted on 2.5.38 for pregnancy and myocarditis. Pendulous abdomen and albuminuria. Cardiotonics, diet, rest in bed, abdominal binder.

31.7.38 Labour pains started in the morning – membranes ruptured at 3 p.m. Head not engaged – internal version performed under general anaesthetic. Weight applied.

1.8.38 Morning. Signs of rupture of uterus. Pain in right iliac region, pulse 130, respiration 40, labour pains stopped. Manual delivery of a macrosomic (13 lbs) macerated fetus. Patient died from haemorrhagic shock after rupture 1.8.38."

The use of traction continued well into the 1950's. The use of Caesarean section for cases of placenta praevia gained ground slowly so that while in 1937-38 no abdominal deliveries were performed for placenta praevia, in 1961-62, seventeen sections were performed for abnormal placentation (Table 1).

Caesarean section is generally a safe procedure, but the increased bleeding in cases of anterior placenta praevia and the higher incidence of placenta accreta in cases of placenta praevia increases the risks of surgery. Management of cases of placenta praevia should not be left to inexperienced junior staff and section should be performed or directly supervised by an experienced obstetrician.

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	1937-38	1951-52	1961-62	1971-72	1981-82
Number of Caesarean Sections for placenta praevia	Nil	9	17	18*	24
Total number of Caesarean Sections performed	32	75	212	421	912
Hospital maternal mortality from placenta praevia	Nil	2	Nil	Nil	Nil
Hospital perinatal mortality from placenta praevia	7	15	Nil	1*	Nil

Note: *Number of Caesarian Sections for placenta praevia for period 5/7/71 - 31/12/72
*Hospital perinatal mortality from placenta praevia for period 1/1/71 - 31/7/72

TABLE 1