Best Practice & Research Clinical Obstetrics and Gynaecology 27 (2013) 221–232

Contents lists available at SciVerse ScienceDirect

Best Practice & Research Clinical Obstetrics and Gynaecology

journal homepage: www.elsevier.com/locate/bpobgyn

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Caesarean section in cases of placenta praevia and accreta

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Keywords:
placenta praevia
placenta accrete
placenta percreta
abnormal placental adhesive disorders
abnormal invasive placenta
postpartum haemorrhage

In the past decade, the incidence of placenta praevia and placenta accreta has increased and seems to be associated with induced labour, termination of pregnancy, caesarean section and pregnancy at older age. These factors imply some degree of tissue damage, which can modify the decidualisation process, and produce excessive vascular remodelling. Placenta praevia and accreta are mainly located in the lower segment, a place that predisposes to persistent uterine bleeding because of the development of new vessels and because it is a poorly contractile area of the uterus. The complexity, determined by tissue destruction, newly formed vessels, and vascular invasion of surrounding tissues, warrants multi-disciplinary management. When resective procedures are undertaken, a suitable plan to tackle surgical problems allows better control of bleeding and avoids unnecessary hysterectomies. In cases of placenta accrete, and especially when skills or institutional resources are not available, leaving the placenta *in situ* may be the best option until definitive treatment is undertaken.

Introduction

Placenta praevia and placenta accreta (abnormally invasive placenta) are two obstetric conditions that are closely linked with massive obstetric haemorrhage. Occasionally, they present with some degrees of intrauterine growth restriction. Placenta praevia is located in the lower uterine segment, which could result in inappropriate placental development owing to the particular development of

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1521-6934/$ – see front matter © 2012 Published by Elsevier Ltd.
http://dx.doi.org/10.1016/j.bpobgyn.2012.10.003

their vessels.[1] Placenta accreta is also known as abnormally morbid adherence of placenta or abnormally invasive placenta. This condition includes all degrees of placental invasion within this generic name of placenta accrete.[2] Placenta percreta, however, which has the deepest degree of invasion, is usually described separately. Diagnosis for placenta praevia and placenta accreta is usually achieved by ultrasound; nevertheless, other investigations may be necessary when there is doubt or when the precise anatomy of placental invasion is required.[3] Placenta accreta has a special type of supplementary circulation through newly formed vessels. The anatomical adhesion among vessels, and placental invasion into the myometrium and the surrounding tissues, pose a great surgical challenge. In these cases, the main objective of the caesarean section is to deliver the baby through a safe area and to avoid uncontrollable bleeding, as massive blood loss could turn into severe shock and coagulopathy in minutes.

General overview and definitions

Placenta praevia is a disorder that happens during pregnancy when the placenta is abnormally placed in the lower uterine segment, which at times covers the cervix. Placenta praevia can be classified according to its position in relation to the internal cervical external orifice into totally occlusive, partially occlusive or marginal. Normally, the placenta should develop relatively high up in the uterus, on the front or back uterine wall but, on some, occasions the placenta will be located in the lower uterus covering or near the external orifice. This location causes particular problems in late pregnancy, when the lower part of the uterus begins to stretch and lengthen in preparation for delivery. When the cervix begins to efface and dilate, the attachments of the placenta to the uterus are detached, resulting in bleeding.[1]

Placenta accreta is defined as the abnormal adherence of the chorionic villi to the myometrium, associated with partial or complete absence of the decidua basalis. Placenta accreta is a condition that involves all degrees of placental invasion into the myometrium (until serosa or beyond it). The degree of invasion is achieved by histological examination: accrete (superficial invasion of myometrium); increta (over 50% of myometrium is involved); percreta (invasion through the entire myometrium); however, this analysis may not provide a definitive diagnosis because many degrees of invasion could co-exist in the same gross specimen or might be missed.[4] For this reason, placenta accreta can be also defined by clinical and surgical criteria.[5–7]

Risk factors

Knowledge of risk factors is particularly important to distinguish among mild cases or in those that the image analysis is not in agreement with the individual's background. The incidence of placenta praevia is about one in every 250 births, and it is the cause of one-third of all cases of antepartum haemorrhage. Placenta praevia is associated with previous uterine scar, smoking, maternal age over 35 years, grandmultiparity, recurrent miscarriages, low socioeconomic status, infertility treatment, previous curettage, previous myomectomy, previous uterine surgery, submucous myoma, Asherman's syndrome, a short caesarean- or curettage-to-conception interval.[8,9] Risk factors for placenta accreta are similar to placenta praevia, even though the main risk factor for abnormal adherence of the placenta is the association between placenta praevia and the caesarean scar.[10,11]

Diagnosis

Placenta praevia

Both placenta praevia and accreta are best diagnosed by ultrasound; this method is highly reliable, low cost, and provides clear signs for image interpretation. Ultrasound examination may diagnose placenta praevia and classify them in early stages. Although abdominal ultrasound can determine the placental position in relation to the cervical external orifice, transvaginal ultrasound is now well established as the preferred method for accurate localisation of a low-lying placenta. Because some