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Maternal Pelvic Floor Trauma

A Guide for Women

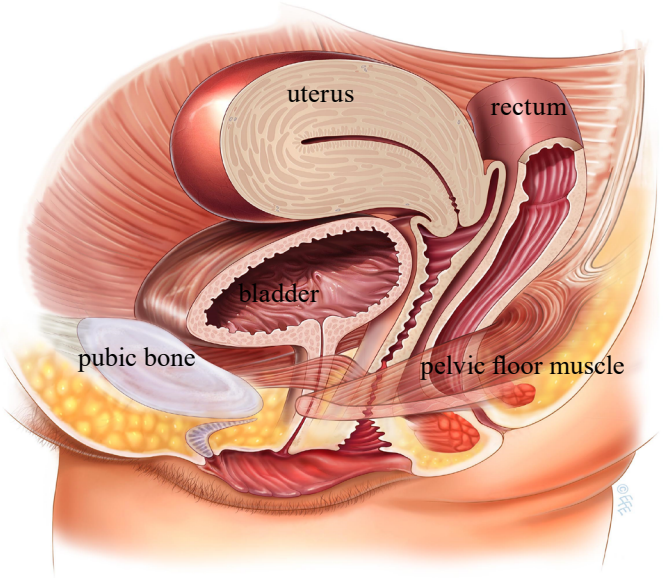
Pregnancy and childbirth are unique experiences in the life of women. The outcome of a healthy mother and healthy baby are desirable endpoints but many factors can influence the outcome of any pregnancy or childbirth. Sometimes childbirth may need to be aided by assisted delivery in the form of caesarean section or operative vaginal delivery with forceps or ventouse (suction cup).

What is maternal event?

A maternal event is any event that can be directly attributable to pregnancy or childbirth. These events are not limited to the duration of either pregnancy or childbirth and many may only become problematic several years after childbirth.

What is the pelvic floor?

The pelvic floor is composed of a sheet of muscle fibres and associated connective tissues (fascia and neurovascular tissues) which span the area underneath the pelvis between the pubic bone at the front and the sacrum or tail bone at the back (see illustration below). It supports the organs of the pelvic floor (uterus, vaginal walls, bladder and rectum). The urethra, vagina and rectum pass through the pelvic floor in an area known as the levator hiatus. This is the weakest area of the pelvic floor.



What is pelvic floor trauma?

Maternal pelvic floor trauma is when there is damage to the muscles, nerves or other tissues of the pelvic floor which affects their functioning and leads to weakness of the pelvic floor.

What are the causes of maternal pelvic floor trauma?

These can be divided into:

- **Mechanical injury.** Crush injury resulting from the head of the fetus compressing, tearing or avulsing the connective tissues of the pelvic floor. Crush injuries may also be caused by the forceps when used to perform an operative vaginal delivery.
- **Nerve injury.** The pudendal nerve is the main nerve that supplies the pelvic floor. It can be compressed and damaged by the fetal head, a big baby, prolonged second stage of labour and instrumental (particularly forceps) delivery.
- **Indirect injury.** During pregnancy there are numerous hormonal and physiological changes that take place. Many of these will take place within the first trimester (the first thirteen weeks of pregnancy). These changes will occur regardless of the final outcome of pregnancy and are necessary to support pregnancy and childbirth. The main hormones responsible for these changes are progesterone and relaxin.

Vaginal delivery (spontaneous or assisted) is the single most important risk factor in the occurrence of maternal pelvic floor trauma. The first delivery tends to be associated with the greatest amount of damage. However, some women will be able to identify the pregnancy or delivery that seemed to have the greatest adverse impact on their pelvic floor function.

Common risk factors for maternal pelvic floor damage include:

- Vaginal childbirth
- Pregnancy
- Advanced maternal age
- Raised body mass index
- Big baby
- Prolonged second stage of labour
- Deep and extensive vaginal wall tears

What types of problems can you experience following pelvic floor trauma?

Women may experience problems during pregnancy, immediately or very shortly after childbirth, or months/years later. Some women will be aware of symptoms for months or years before they mention them or seek help. These can be divided into four main areas:

- **Urinary problems.** Urinary incontinence is the most well recognized urinary symptom of maternal pelvic floor damage. Other symptoms include increased daytime frequency (8 or more times) or increased night-time frequency (more than once).
- **Bowel problems.** Anal incontinence is a common bowel problem resulting from maternal pelvic floor damage (see

leaflet on fecal incontinence). Some women will experience incomplete bowel emptying related to the development of prolapse of the posterior vaginal wall (back wall) or top of the vagina (vault). Methods adopted by women with incomplete emptying include returning to the toilet to try and empty their bowel, pushing with their fingers on the area between the vagina and anus (perineum) or needing to place a finger in the vagina or rectum.

- **Sexual problems.** Pain during intercourse can be experienced at the entrance of the vagina and is often due to scar tissue from vaginal tears or cuts made deliberately (episiotomy) to aid childbirth. Some women will report pain or discomfort at the top of the vagina, particularly when they are in a position where penetration is particularly deep. This is usually because the cervix (neck of womb) is being moved upwards or loose skin of the upper part of the vaginal wall is being stretched.
- **Prolapse problems.** Some women first become aware of a prolapse when they feel a lump near the entrance to the vagina (e.g. in the shower). The feeling of a bulge, pressure, heaviness and fullness within the vagina are other common complaints reported by women suffering from pelvic organ prolapse (see leaflet on pelvic organ prolapses).

How can maternal pelvic floor trauma be reduced?

It is important to recognize that some factors cannot be prevented, for example some of the hormonal changes that take place during pregnancy, which can be a risk factor for pelvic floor damage, if altered may result in pregnancy failure. Risk reduction is aimed at targeting factors that can be influenced without placing the pregnancy at risk and includes the following:

- Delivery by caesarean section. This is very controversial. Evidence suggests that delivery by caesarean section is protective to the maternal pelvic floor if the woman only has two deliveries. Beyond two deliveries, the protective effect is no longer apparent. Delivery by caesarean section is associated with risks. These can be significant and increase with the number of caesarean sections.
- Avoiding operative vaginal delivery. This can be achieved by early resort to caesarean section if labour is not progressing properly and is identified in a timely manner. Avoidance is not always possible as it is sometimes safer to perform an operative vaginal delivery, for example, when the baby's head is very low and caesarean section would be difficult.
- Avoiding a prolonged second stage of labour, i.e. the time from the cervix being fully open (dilated) to the delivery of the baby. There is a lot of pressure and pushing on the pelvic floor during this period. Hence, labour needs to be managed actively to prevent undue prolongation of this stage of labour.
- Early delivery if there is good evidence that it is likely to be a very big baby (for example 4.5kg or more).
- Losing weight before pregnancy to achieve a normal body mass index.
- Pelvic floor exercises prior to, during, and post pregnancy.

How can maternal pelvic floor trauma be treated?

Treatment of maternal pelvic floor trauma can include conservative and surgical options. Treatment will need to be focused on the specific problems you are experiencing and the findings of your doctor. Whilst there is some overlap, the management of urinary, bowel, sexual and pelvic organ prolapse problems are different and will be discussed with you by your doctor.

Conservative treatment may include:

- Pelvic floor exercises with a pelvic floor physiotherapist (see leaflet on pelvic floor exercises)
- Temporary use of vaginal support pessaries (see leaflet on vaginal pessary for pelvic organ prolapse)
- Temporary use of local vaginal estrogen (see leaflet on low-dose vaginal estrogen therapy)

Surgery will need to be tailored to the individual woman's circumstances, taking into account:

- The problems you are experiencing
- The findings of your doctor on examination and the outcomes of any investigations
- Whether you consider your family to be complete or not

The general advice is to complete all deliveries prior to surgery. Individual circumstances and the degree of problems you are experiencing may not always make this practicable and even though surgery can be repeated, it is important to get specialist advice about this. If a further pregnancy is contemplated after pelvic floor surgery, it is important to discuss the delivery options with your obstetrician and pelvic floor surgeon.

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