

LITERATURE REVIEW

The application of antenatal perineal massage: a review of literature to determine instruction, dosage and technique

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Abstract

A literature review was undertaken to determine the instruction, technique and dosage described for antenatal perineal massage in research trials. Relevant databases were searched and nine relevant studies were identified. The methodology of each study was reviewed and compared. Common approaches were found for the description of the technique, and the training of women and their partners. There was some variation in the dosages and frequencies recommended. A key feature of an early study, the incorporation of Kegel exercises, appeared to be lacking in subsequent studies. Furthermore, plans for effective learning, including accurate feedback, and strategies to enhance compliance were mostly absent. A supervised, patient-centred approach may address this.

Keywords: antenatal, massage, perineum.

Introduction

A recent Cochrane review (Beckmann & Garrett 2006) has confirmed that antenatal perineal massage (APM) is effective in reducing perineal trauma and the need for episiotomy among primiparous women during childbirth. In light of the accumulation of evidence of the beneficial effects of APM, provision of information on this technique has been introduced as part of routine antenatal care within certain maternity units in the UK (Gomme *et al.* 2003). However, the consistency and quality of APM instruction, and the optimum dosage for effectiveness have not been reviewed.

The aim of the present review was to determine the instruction, technique and dosage described for antenatal perineal massage (APM) in research trials.

Materials and methods

Using Ovid Online, a search of relevant databases for English-language articles was performed. The databases searched were: the British Nursing Index, Ovid Medline, CINAHL, EMBASE and AMED. Primary research articles that used APM as an intervention were included.

Results

Nine separate studies of varying quality were identified as employing or reporting on perineal massage as an intervention during pregnancy. The first study was undertaken more than 20 years ago in an attempt to provide a research basis for APM (Avery & Burket 1986). This was in response to increased interest by women in the procedure and anecdotal evidence amongst midwives that the technique was beneficial. A high drop-out rate, which led to a small sample size, and poor blinding of the delivering midwife, which meant that it was difficult to establish which women had performed the massage,

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meant that the positive findings of the above study were undermined.

Since then, however, three large randomized controlled trials (RCTs) and a two-part quasi-experimental study have reported that APM can reduce rates of perineal tearing during childbirth (Labrecque *et al.* 1994, 1999; Shipman *et al.* 1997; Gomme *et al.* 2003, 2004).

The technique applied by Avery & Burket (1986) is quoted as the technique employed in a number of subsequent studies (Avery & Van Arsdale 1987; Labrecque *et al.* 1994, 2000) and seems to be the basis of others (Mynaugh 1991; Shipman *et al.* 1997; Bodner-Adler *et al.* 2002; Eogan *et al.* 2006).

However, there is some variation in how studies report the detail of the procedure. The next section describes the education element under the headings of mode of instruction, description of technique and prescribed dosage.

Mode of instruction

In all the studies identified, a researcher (usually a nurse or midwife) educated women on how to perform APM using a combination of verbal instruction and provision of written information. The verbal instruction sometimes included use of an obstetric model of the perineum (Labrecque *et al.* 1999).

One study used a 12-min training video to present information on anatomy of the perineum and episiotomy, and included a simulated demonstration of perineal massage (Mynaugh 1991). The use of video appeared to increase the number of women who adhered to the massage routine, but this was not statistically significant. Overall, only 37% of women who viewed the video practised APM.

In two RCTs by Labrecque and colleagues (1994, 2000), video was also used, along with verbal and written information, but it is not clear if this was also a simulated demonstration.

Description of technique

The description provided by Avery & Van Arsdale (1987) has the most detail. This includes pre-session advice, such as emptying the bladder, using a warm bath to soften tissues and using a mirror to become 'thoroughly familiar' with the perineum (p. 183). In another study, pre-session hand-washing was part of the written information (Mynaugh 1991).

Descriptions of the best posture for performing APM were not always clear, with terms such as 'propped up comfortably' (Avery & Van

Arsdale 1987) and 'a semi sitting position with back support' (Mynaugh 1991) being used.

Lubrication of the digits is considered important by all studies, with a range of lubricants, including vegetable oil (Avery & Van Arsdale 1987; Mynaugh 1991), almond oil (Labrecque *et al.* 1999; Gomme *et al.* 2004) or water-soluble jelly (Mynaugh 1991), suggested for this purpose.

It is suggested that one or two fingers are inserted into the vagina to a depth of 3–4 cm (Labrecque *et al.* 1999) and even up to 5 cm (Shipman *et al.* 1997) in order to perform the stretch. Most studies state that women should insert their thumbs to administer APM (Avery & Van Arsdale 1987) or their partners should insert index fingers (Mynaugh 1991).

The description of APM in Avery & Van Arsdale (1987) includes massaging the vaginal wall in a U-shaped movement and stretching and holding. Some authors seemed to have emphasized only one of these. Labrecque and colleagues (1994, 2000) focused more on the stretch and hold, while Shipman *et al.* (1997) put more emphasis on massaging from '3 o'clock to 9 o'clock'.

Notably, Avery & Van Arsdale (1987) integrated Kegel exercises into the procedure, encouraging women to familiarize themselves with the difference between tightening their pelvic floor muscles and relaxing them during the massage. No subsequent studies appear to place the same emphasis on this.

Prescribed dosage

Generally, APM is introduced after week 34 of pregnancy, following education from a midwife. The advised duration of each repetition is 2 min, and the overall application varies from 4 (Shipman *et al.* 1997) to 10 min (Mynaugh 1991; Labrecque *et al.* 1999). There is variance in the literature as to the frequency required, from daily (Avery & Van Arsdale 1987; Labrecque *et al.* 1999) to three or four times a week (Shipman *et al.* 1997). One retrospective study included women in their intervention group if they had reported doing APM on 'three separate occasions' (Davidson *et al.* 2000, p. 475).

Discussion

Despite support from a systematic review (Beckmann & Garrett 2006), there is still some doubt about the efficacy of APM for reducing perineal tears (Eogan *et al.* 2006). Because of the

high 'numbers needed to treat' for a successful outcome (Beckmann & Garrett 2006), it is not surprising that large-scale studies are required in order to show consistent positive outcomes. The fact that not all women will experience the benefits may also dent the enthusiasm of the health professional promoting APM. Drop-out rates are also problematic, even in studies where the women have chosen to be in the massage group (Eogan *et al.* 2006).

The information given to women and the techniques applied should optimize the adoption and efficacy of APM, as well as promote adherence to the technique. However, there seem to have been missed opportunities to improve the learning of a correct technique, even in the studies with positive outcomes.

For example, the mode of instruction tends to rely on educational materials and verbal instruction. There is no opportunity for supervised experiential learning where the women are able to feel the correct technique being applied. Notably, while the use of video demonstration may provide visual cues and has been found to increase the recruitment of women to attempt massage, it does not guarantee adherence (Mynaugh 1991). Furthermore, in the one study where it was detailed, the video demonstration used an obstetric mannequin (Mynaugh 1991, p. 155). As such, this may not have provided a realistic visual representation.

The reliance on non-experiential learning and teaching strategies, may result in the skill being learnt incorrectly, leading to excessive discomfort or ineffectiveness. It may also reduce the perceived relevance of the technique, especially when trying to interpret a two-dimensional image. In either case, adherence would be expected to be reduced and/or the efficacy reduced.

The effectiveness of the learning of a new technique is also affected by the attitudes of the health professional who is facilitating the learning process. Clearly, the midwives in the study by Gomme *et al.* (2003) were found to differ: first, in their willingness to be trained as educators; and secondly, in their willingness to pass on the information to all women. It has been recognized that as few as one in six midwives regularly advise pregnant women about APM as part of their standard antenatal care (Gomme *et al.* 2003).

It is worth noting that there are often no strategies described for facilitating adherence, apart from record-keeping in the form of a diary

and provision of a lubricant. It could be suggested that, as with other self-management strategies, a period of supervised training and support, along with intermittent checking and correction of technique, might improve both the efficacy and the adherence to the technique.

It has also been proposed that information should be provided to women earlier in their pregnancies, i.e. at 30 weeks rather than 34 weeks (Gomme *et al.* 2004). This might promote adherence since it may enable the women to become familiar with APM before the abdomen becomes very large (Gomme *et al.* 2004).

Another issue relates to the variation in the description of the different aspects of the technique in the research papers. In part, this may be a result of imposed word-limit restrictions for publications impacting on the amount of detail in the methodology. However, variations in recommended posture, depth of penetration of digits and duration of application were noted. None of these variables have been compared for effectiveness, and therefore, are presumably based on anecdotal evidence. By stating such targets and being prescriptive about the postures to be adopted, women are more likely to feel that they cannot achieve the desired approach and so be less likely to persist with it.

It may be that, rather than attempting to be prescriptive on how to perform what is often an uncomfortable technique, at least initially, there is more value in assisting women to identify what is effective for them. This would almost certainly require a supervised approach that is not described in the studies.

Finally, the authors of an early study incorporated Kegel exercises into their approach to APM (Avery & Van Arsdale 1987). The importance of this may have been underplayed in subsequent reports, especially the training of relaxation of the pelvic floor. The conclusions of the systematic review include the suggestion that the relationship between length of tissue and perineal tears is modified by other factors. Perhaps pelvic floor control including relaxation, increased proprioception and desensitization is just as important as stretch.

Conclusions

Antenatal perineal massage is presented as a simple digital technique. Some variation was found in the teaching of the technique across studies. It was noted that strategies for promoting adherence, or those for checking that the

technique is performed correctly, appear to be mostly absent. There are also findings indicating that some health professionals may be uncomfortable about introducing APM to women.

A review of the education strategies utilized, increased supervision, and an individualized or patient-centred approach to the introduction and facilitation of APM may increase adherence to and the effectiveness of this apparently valuable technique.

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