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The Role of Physiotherapy in Parity-Induced Flatus Incontinence: A Case Report

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Case Report

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Abstract

Gas incontinence also known as Flatus incontinence is a common postpartum anal incontinence which impairs social participation and also lacks established protocol of management. Symptom persistency has been reported after perineal muscles repair due to weakness/ loss in function of the pelvic floor muscles. This case report describes about the importance and effectiveness of Pelvic Floor Muscle Rehabilitation (PMR) in a 28year old primiparous woman, four months postpartum who presented with parity-induced flatus incontinence aggravated after sexual activities at a the Physiotherapy clinic of a state government owned hospital located in the south eastern part of Nigeria. Pelvic Muscle Rehabilitation (PMR) and Stabilization exercises were administered thirty minutes (30mins) to forty-five minutes (45mins) three times (3x), a week (1 week) for four weeks (4weeks). There was a significant reduction in Mark's (Vaizey) score by more than 2 points at the end of the four weeks of physiotherapy intervention and also patient recorded improvement in all the domains of faecal incontinence quality of life scale, pelvic floor muscle strength (anal squeeze pressure) and pelvic floor muscle function (endurance and coordination).

Keywords: Flatus Incontinence; Pelvic Floor Muscle; Parity; Post Delivery; Primiparous; Physiotherapy Modality; Perineal Tear; Anal Sphincter Injuries

Abbreviations: PMR: Pelvic Muscle Rehabilitation; OASI: Anal Sphincter Injury; PSIS: posterior superior iliac spine; DRE: Digital Rectal Examination.

Introduction

Flatus incontinence is a common complication associated with vaginal deliveries, that has a devastating effect on quality of life, although not life threatening [1,2]. Flatus incontinence has been reported to be the most commonly occurring postpartum anal incontinence [3]. It is often characterized by frequent flatus leakage despite active attempt to retain content, with associated telltale odour or copious noise. This results in unpredictability of bowel habit which contributes to social participation and physical activity restriction [1,2] consequently impacts negatively on quality of life Bols EM, Chin K [4,5]. Reported that Obstetric Anal Sphincter Injury (OASI) that is perineal tears of grades three (iii) or four (iv) are strong predictors to feacal incontinence and flatus incontinence, respectively. However, studies has showed that flatus incontinence could be linked to anatomical or functional changes in the pelvic floor muscles and its nerve supply (levator ani muscles) [6,7]. Obstetrics events such as operative vaginal delivery which involves midline episiotomy, instrumental delivery which includes the use of forceps or vacuum extractor, large birth weight of >4.0kg prolonged second stage of labour, perineal sepsis are contributory factors [8]. Despite the existence of

this problem, the negative effect of this condition has been grossly under estimated as most clinician are lacking in basic skill for evaluation as well as clinical experience and knowledge on the current management approaches. Pelvic Muscle Rehabilitation and stabilization exercise has been used as a treatment of choice for most pelvic floor muscle dysfunction especially in management of pregnancy or parity associated pelvic floor disorder like urinary and feacal incontinence to improve muscle strength, muscle endurance and sphincteric co-ordination. However, there is paucity of data on its use in management of parity-induced flatus incontinence [5,7]. Sadly, sphincter repair, which has been proposed to be effective, seldom restores function [9].

As a result, this study is a case review to elucidate on the role of physiotherapy modality in the management of parity-induced flatus incontinence.

Case Report

A 28 year old primiparous woman, delivered of a full term male baby (3.6kg) at 38 weeks gestational age via spontaneous vaginal delivery in the labour ward of a ESUT Teaching Hospital Parklane, Enugu State Nigeria. Presented to the physiotherapy department of the above facility four months post-delivery with the complaints of inability to control flatus, aggravated by sexual activities. There was positive history of a median incision at the lower vaginal lip (episiotomy) to assist vaginal delivery, which was surgically repaired. Patient developed perineal pain associated with a foul smelling odour 2weeks post-delivery, due to perineal suture breakdown following a suspected case of perineal sepsis. Patient sought medical care from a traditional birth attendant, with remarkable improvement of symptoms, however, patient observed frequent involuntary loss in flatus which impaired her activities of daily living and usually worsens after sexual activities. On evaluation, the vital parameters B.P=130/70mmHg and P.R=60beats/min while the anthropometric measures were weight=65kg, Height=1.62m, B.M.!=24.8kgm-2. Information about symptom severity was obtained using Mark's [10] score=8/24, Number episodes of flatus/day= 4-5times and Feacal incontinence Quality of Life scale (FiQols)=14/29. Following the guideline by general medicine council standard committee (2001) for perineal examination: Examination began in lithotomy position

- Visual inspection of the perineum revealed scant vaginal discharge (cream colour) with no foul smell, no organ prolapse (rectocele, cystocele or uterine prolapsed) on coughing, presence of episiotomy scar, no haemorriods.
- Digital rectal examination (DRE): on dorsal lithotomy using a gloved index finger: findings revealed no clear gap in the anal verge.

DRE scores on voluntary pelvic floor muscle contraction are as follows

Power: Anal squeeze pressure=2/6 using manual muscle test on six point scale [11]. It is a six-point scale (0_ nil contraction, 1_flicker, 2_weak, 3_moderate, 4_good, 5_strong). Laycock, (2001) built on this by developing and validating the 'PERFECT' [11].

Endurance: grade 3 (moderate) 5secs hold and finger elevation

Repetition: 3rps for 10secs

Fast: 2rps in 1sec

ECT every contraction timed.

Following these findings, specifically from subjective assessment, a diagnosis of flatus incontinence was made.

Intervention given:

The 4 weeks intervention period was administered consisting of 12 sessions of individual appointments with a Women's health physiotherapist at department of physiotherapy, ESUT Teaching Hospital Park lane Enugu, Nigeria. Patient in dorsal lithotomy position, was given pelvic floor electrical stimulation using (Sys*StimR 208 Model ME208, 50-60Hz, 0.75Amps Max, Made in India). A pair of adhesive surface electrode measuring 4x4 square meters, one of the two, attached to a red cord representing the active electrode placed at the perineal body (junction between the posterior lip of the vagina and the anterior edge of the anal orifice) while the inactive electrode represented by a black cord place at the midpoint between the posterior superior iliac spine (PSIS) with a land mark being the dimples.

Treatment parameters settings are as follows;

a. Time: 10-15 minutes
b. Frequency: 5Hz
c. Pulse mode: surge mode
d. Intensity: determined by the patient
e. Duration: 3x/4weeks
f. Other treatments included:

PFMT and Biofeedback (Hand placed at the perineum) Time: 10-15minutes

Dosage: perform 3sets of 8-10 maximum pelvic floor muscles / sphincteric contraction and hold of 3-5 seconds interspersed with 5 secs rest and deep breathing exercise. In the 6th session progressed to 10-15 Maximal Voluntary Pelvic Floor Muscle Contraction. Duration: 3x/4weeks Home Exercise Programme-3times / 4days

- **Core Stabilization Exercise**

Time; warm up-5mins, cool down -5minutes

Exercise technique: Abdominal bracing (crook lying, heel slides, leg lifts, bridging, standing. quadruped alternate arm and legs lifts)

Dosage: 10 Reps-I Rep 5 secs hold for each exs technique done for 15minutes

Total treatment duration -30-45 mins,
Total treatment sessions - 12session, 3times/4weeks

Results

After 12 sessions of intervention, there was significant improvement in all the outcomes assessed, this is shown as follows; St Mark's score 8/24 to 0/24 (0=no incontinence; 24=worse symptom)s; FIQOLs 14/29 to 24/29 improvement in all domains of this scale (lower score indicated worse effect). The measured maximum anal squeeze pressure during VPFMC = Grade 3 to grade 4+, maximum endurance increased from grade 3(moderate - contraction held for 5secs seconds without finger elevated) to Grade 4 (strong-contraction held for 7seconds with finger elevated). Repetition 3rps for 10secs -5rps for 10secs; Fast: 2rps in 1sec to 3rps in 1sec.

Discussion

The finding that physiotherapy modalities improved, pelvic floor muscle strength, endurance, coordination and quality of life in this study suggests that physiotherapy is worthy of consideration for postpartum mothers with flatus. This is consistent with result obtained by Mahony, et al. [12] in which Pelvic floor Muscle Rehabilitation improved quality of life in patient with anal incontinence [12]. Anal incontinence is an umbrella term for bowel symptoms comprising of faecal incontinence, flatus incontinence, mucus incontinence and feacal urgency.

The speedy improvement observed within 4weeks in this study is contrary to that available in the literature where improvement obtained may be averaging 3-6 months [13]. This may be traced to supervised exercise sessions and nature of current delivery methods utilized. This concurs with previous findings that effectiveness of therapy is associated with high adherence to the programme as prescribed [14]. Hence, suggesting that frequency and intensity of therapy has a major role in reducing postpartum flatulence. Again, the combined effect of all recommended modalities for management, perhaps may have been the reason for faster improvement contrary to available literature were one modality of physiotherapy is utilized as a stand-alone therapy [15].

Studies Naimy N, Brown OB [16,17] has shown that many researchers favour the use of intravaginal or endoanal probe above surface electrode placement for pelvic floor muscle stimulation for management of anal incontinence, where the target of treatment is given to a group of pelvic floor muscles especially the muscles of anal sphincters, while this may be an effective form of therapy, however any form of therapy that selectively ignores the whole pelvic floor muscle action will likely produce a suboptimal health outcomes and Hopkinson et al. [18] further stressed that the activity of the pelvic floor muscles (levator ani muscles) is more important than anal sphincter tone in anal continence maintenance. Surface electrode placement has demonstrated greater promising effects in the management of pelvic floor dysfunction as showed in the management of stress urinary incontinence [19-21]. Their result revealed significant improvement in pelvic muscle strength, quality of life, sphincteric coordination, decrease in stress urinary incontinence and greater number of patient being continent.

Again Hwang, et al. showed significant improvement in female sexual function and in the strength [22,23] power and endurance of the pelvic floor muscles when he investigated on the effects of surface electrode stimulation during sitting on pelvic floor muscles and sexual function in women with stress urinary incontinence. However, more studies are needed to establish its effectiveness either as an adjunct or stand alone therapy in the management of flatus incontinence.

Conclusion

Physiotherapy is of great benefit to post-partum women presenting with flatus incontinence.

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