

morphology of the emissions together with the duration amplitude and presence or absence of polyphasic potentials was recorded. Nerve conduction latency was next assessed using the pudendo-anal reflex . The concentric EMG needle was left in situ and the reflex was assessed using an electrical stimulator held by the patient. The cathode was placed directly over the clitoris with the anode lying free proximally. The current intensity used was below the individual tolerance threshold ( 20-30mv) using a pulse duration of 0.2m/s , sweep speed of 10 ms/cm, amplifier gain set at 200uv/cm and standard sensory filter settings.

Electrical stimulation resulted in three responses referred to as early, intermediate and late ( L1, 2 and 3). The response ( L3 ) was used to assess the integrity of the pudendo-anal sphincter reflex . An abnormal L3 value was taken as greater than 42 m/s. The duration and amplitude of the reflex was also assessed. Electrodiagnostic assessment of pudendal nerve function using both techniques was performed for both right and left pudendal nerves. All data recorded was stored on an IBM compatible database and statistical analysis performed using a statistical software package.

**Results:** The mean age for the study group was 31 years (range 22 - 41) and the median follow-up time was 18 weeks ( range 12 - 16 weeks ).The median fecal incontinence score was 15.5 ( range 8 - 20). All patient's had muscle disruption at trans-anal endosonography. Combined needle EMG and distal nerve conduction studies identified significantly greater neurological injury 27 ( 81%) compared to proximal nerve conduction latency testing alone 9 ( 27%); ( p<0.0001) .

9(27%) women had evidence of prolonged conduction nerve latency using the St. Mark's technique, which was confirmed by needle EMG. The mean PNTML was 2.1 m/s on each side ( right, range 1.8- 2.6m/s, left, 1.7 - 2.6 m/s ). 14 (42%) women had a prolonged pudendo-anal reflex latency ( L3 > 42m/s) with prolonged amplitude and duration.

At needle EMG 27 ( 81%) of patients had evidence of nerve injury, 17 ( 51%) reduced insertional activity and 27 (81%) positive sharp wave activity or fibrillation potentials. 16 (48%) demonstrated abnormal recruitment and 13 (39%) had evidence of polyphasic potentials with increased MUAP amplitude and potential reflecting ongoing recovery through collateral nerve sprouting.

**Conclusions:** These results show that needle EMG and combined pudendo-anal reflex conduction latency assessment identifies neurological abnormality in a greater number of women with postpartum obstetric fecal incontinence and may be a better selector for treatment than more proximal nerve conduction latency testing alone. We conclude that needle EMG with combined NCV should form part of the routine assessment of patients presenting with fecal incontinence following obstetric trauma.

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ANATOMICAL AND FUNCTIONAL RESULTS AFTER REPAIR OF THIRD DEGREE ANAL SPHINCTER RUPTURE

Aims of Study

Many studies have been published about the problem of sphincter rupture during delivery. The publication of Sultan (1) about postpartum (pp) clinical occult, not visible but sonographically proven sphincter lesions has added a new dimension to this topic. No long term reports of morphological and functional results after immediate sphincter repair have been presented. The perineal and endoanal sonography are new modalities in morphological evaluation of the anal continence control system. The objective of this prospective study was the evaluation of anatomical and functional results after primary repair of third degree anal sphincter rupture pp.

Methods

49 women (mean age 30.4±4.4 years) with third degree sphincter rupture and immediate postpartum repair were assessed 6 days, 6 weeks and 6 months pp. History, clinical investigation and ultrasound were done in all follow up times. The perineal ultrasound scans were performed by a 5-MHz convex transducer. Endosonography of the sphincters requires a high-frequency transducer (10 MHz) for detailed resolution, near-field focusing and an axial 360° image to view the circular sphincter structures. Views of the canal at high, mid and low levels were taken. Of the women from the study group, 73.5% (n=36) had a spontaneous vaginal delivery, 24.5% (n=12) had a delivery by vacuum, and 2% (n=1) by forceps. The control group contained 55 (53.4%) spontaneous vaginal deliveries, three (2.9%) vacuum extractions, three (2.9%) forceps deliveries and 16 (15%) cesarean sections.

**Results**

Due to the sphincter edema and hematoma at 6 days postpartum no clear clinical and sonographic assessment about the quality of the repair could be made. The measurement of the thickness of the external and internal sphincter revealed a decrease ( $p < 0,025$ ) in thickness within 6 weeks (pp: Internus  $3.3 \pm 1.1$ mm – Externus  $8.8 \pm 2.3$ mm / 6 month pp: Internus  $2.1 \pm 0.9$ mm – Externus  $5.5 \pm 1.8$ mm).

	3-6 days pp	6 weeks pp	6 month pp
no symptoms	34	29	26
incontinence of gas	9	25	41
incontinence of stool	4	8	6
urgency stool	2	8	17
perineal pain	61	38	28

(detail in %)

The quality of the repair did not correlate with the symptoms of incontinence. Six months pp 20% (n=10) showed good clinical and sonographical results, 53.1% (n=26) showed good clinical but unsatisfying sonographical results, and 22.4% (n=11) had clinical problems with good sonographical results, two women had both, unsatisfying clinical and sonographical results. That means half the women had unsatisfactory anatomic results after 6 months.

We detected a defect of the sphincter in 31 women (30.4%) in the control group.

**Conclusions**

Our results have shown only conditionally correlation between the clinical and sonographical findings. Because of the unsatisfactory anatomical results of primary repair and only partial recovery in 53.1% of the women, it should be reconsidered optimizing the operation technique by overlapping of the sphincter instead of end-to-end anastomosis. The good clinical findings in spite insufficient sphincter repair as shown by ultrasound could be explained by assuming that the puborectalis loop is used as a functional compensation. Functional disorders and morphological defect healing are inevitable in spite of recognizing and repair of third degree rupture. As sphincter defects often go together with levator defects, the surgical repair should always be accompanied by physiotherapy of the whole pelvic floor. The complaints after sphincter defects are often seen as late as after months or years so that even after primary repair a prolonged medical care one year and longer is necessary. The endoanal sonography has shown to be a good method for perioperative monitoring. In our current study, the comparison between the endosonography and the magnetic resonance imaging and tonometric measurements will show whether there can be find a better correlation among clinical symptoms and morphological findings.

1) Int J Colorect Dis (1994) 9: 110-113

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A FIVE YEAR PROSPECTIVE RANDOMISED URODYNAMIC STUDY COMPARING OPEN & LAPAROSCOPIC COLPOSUSPENSION.

**AIMS:** To compare two groups of women who have been randomised into laparoscopic and open colposuspension five years after operation.

**PATIENTS AND METHODS:** Sixty women with urodynamically proven moderate or severe GSI were randomised to open and laparoscopic colposuspension. Both groups had similar age, degree of GSI, length of symptoms, drop-out rate (Lap = 7, Open=6), parity and HRT usage. An identical technique using 4x1-0 polyglycolic sutures was used in both operations. The women were analysed before the operation and at 6, 12, 36 and 60 months. Analysis was by subjective visual analogue score, Pad test, urinary diary, Videocystourethrography and Urethral Pressure Profile.