

THREE DIMENSIONAL ANAL ULTRASOUND ASSESSMENT FOLLOWING OBSTETRIC ANAL SPHINCTER INJURY.

Hypothesis / aims of study

Clinically diagnosed obstetric anal sphincter injury (OASIS) occurs in about 3% of women after having their first baby, and 0.8% of women who have previously had at least one baby. The consequences of OASIS include bowel symptoms in 28% to 59% of women with extensive tears following primary repair. 3D endoanal ultrasonography (EAUS) facilitates axial and craniocaudal reconstruction of the anal canal resulting in a better delineation of normal anatomy and defects of the anal sphincter complex and it is the accepted gold standard assessment tool following OASIS.

There is a positive correlation between the extent of external anal sphincter injury and the degree of anal incontinence with further deterioration in function associated with a combined internal and external anal sphincter injury.

The aims of this study were to assess defects of the anal sphincter complex in the axial and craniocaudal planes and its correlation with anorectal physiology (ARP) and symptoms in patients following OASIS.

Study design, materials and methods

This was a retrospective study reviewing EAUS, ARP and symptoms. All women with a clinically diagnosed obstetric anal sphincter injury were referred to the dedicated obstetric anal sphincter injury clinic three months after delivery for assessment. A full questionnaire history was obtained, EAUS and ARP were performed.

The women were then reviewed in the dedicated clinic, three months after their first appointment, to discuss the results of their investigations and implications for future mode of delivery. Women with significant anal sphincter injury, faecal incontinence, urinary symptoms or low anal pressures were referred for biofeedback or physiotherapy as appropriate.

3D EAUS was performed using a B&K Pro Focus ultrasound scanner with a 2052 probe.

Measurements were performed on the 3D EAUS in both the axial and cranio-caudal planes.

Anorectal physiology studies were performed using the Medical Measurement Systems anorectal manometry equipment and water perfused 8 channel radially arranged catheters.

Results

159 consecutive EAUS were reviewed along with the physiology and patients symptoms.

32 (20%) patients had no EAS and 3 of these patients had an internal sphincter injury. 127 (80%) had an EAS injury with 56 (35%) having both an IAS and EAS injury.

30 (19%) had an external anal sphincter injury for the entire length of the anal canal, 14 (9%) had an injury to over 50% of the cranio-caudal length but not the full length.

11 (7%) had an injury of over 90 degrees in the axial plane to the EAS. 45 had an injury of over 90 degrees in the axial plane to the IAS.

Anal physiology was available 126 patients. For all patients the median maximum resting pressure was 58.5mmHg with an incremental maximum squeeze pressure of 42mmHg.

There was a significant difference in the physiology comparing those with an EAS and IAS with those with no injury. The extent of injury also affected the anal physiology pressures with those with a greater cranio-caudal and axial injury having lower pressure.

Interpretation of results

The assessment of the anal sphincters in the axial and cranio-caudal planes gives greater information as to the extent of the OASIS.

20% of those with a clinically diagnosed OASIS have no obvious injury on EAUS. 19% have an injury for the full length of the anal canal with a further 9% having an injury to over 50% of the anal canal.

Anal sphincter pressures are reduced in patients with greater axial and cranio-caudal injury.

Concluding message

The three dimensional anal ultrasound allows for a more accurate assessment of the extent of OASIS and this correlates with sphincter function.

Disclosures

Funding: Nil **Clinical Trial:** No **Subjects:** NONE