Randomized controlled study to compare between the outcome after STARR and after trans-anal Delorme's for surgical treatment of obstructed defecation

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Obstructed defecation

- Obstructed defecation (OD) is a broad term of the multifactorial pathophysiologic condition describing:
  - the inability to evacuate contents from the rectum
  - leading to difficulty with defecation
  - that impairs the quality of life.

"Feces reach the rectum, but rectal emptying is extremely difficult. The patients have a feeling that defecation is blocked"
Incidence

- Chronic constipation affects 2-30% of the Western World
- 30-50% suffer from obstructed defecation syndrome
- 7% of the adult population
- Age of 65
- Female predominance
- Affect 15% to 20% of the adult female

Clinical picture

- Difficult evacuation
- Excessive straining during defecation
- Sensation of incomplete evacuation
- Prolonged time to defecate
- External assistance to aid defecation
  - Perineal support
  - Odd posture
  - Insertion of fingers into the vagina and/or anal canal
  - Enema
- Anal pain
Obstructed defecation

- **Mechanical causes.**
- **Functional disorders.**

**Mechanical causes**
- Rectoanal intussusception
- Rectocele
- Sigmoidocele
- Enterocoele
Rectoanal intussusception

Circumferential infolding of the rectal mucosa more than 3 mm during evacuation

Pescatori classification
• First degree when below the anorectal ring on straining
• Second degree when it reached the dentate line
• Third degree when it reached the anal verge

Rectocele

Any anterior or posterior bulge outside the line of the rectal wall that is greater than 2 cm and that occurred during rest and at attempted defecation

Marti classification:
• Type 1: digitiform rectocele
• Type 2: big sacculation with anterior rectal mucosal prolapse
• Type 3: rectocele associated with intussusception or rectal prolapse
Enterocoele

Prolapse of the small bowel into the rectogenital space
- The etiological classification of enterocoele
  - Primary
    - Multiparity
    - Advanced age
    - General lack of elasticity
    - Obesity
    - Increased abdominal pressure
  - Secondary
    - After gynecological surgical procedures, especially hysterectomy.

Functional disorders

<table>
<thead>
<tr>
<th>Anismus</th>
<th>increased anal resting tone</th>
</tr>
</thead>
<tbody>
<tr>
<td>pelvic floor dyssynergia</td>
<td>failure of relaxation or paradoxical contraction of the puborectalis and/or external anal sphincter during defecation</td>
</tr>
<tr>
<td>descending perineum syndrome</td>
<td>The is a sequel of long-standing, excessive straining, which weakens the pelvic floor causing excessive perineal descent</td>
</tr>
</tbody>
</table>
Diagnosis

Clinical assessment:
- History
- Examination
- Obstructed-defecation syndrome Scoring System

- Sigmoidoscopy
- Dynamic defecography
- Dynamic MRI
- Anorectal manometry
- EMG
Radiological investigations have shown that subclinical obstructed defecation can be compensated by three basic mechanisms:

1. Transverse extension of the rectum forming a rectocele
2. Longitudinal extension forming a perineal descent
3. Pelvic expulsion forming prolapsed piles.

However, these mechanisms work only if the rectum is capable of creating an endoluminal pressure gradient greater than the residual closure pressure of the anal sphincter.

With prolonged obstruction the previously described anatomical alteration will occur leading to extreme thinning and laxity of the muscular coat of the rectum with loss of the normal rectal compliance, which leads to the inability of the rectum to support pressure for defecation and the development of rectal invagination that gradually increases until it obstructs the normal passage of the stool.
Aim of treatment

- Restoration of rectal flow
- Restoration of normal rectal wall thickness and compliance,
- Correction of rectocele, and correction of rectal intussusceptions

Treatment

- Medical
- Biofeedback
- Surgery
Treatment

Surgical treatment:

PERINEAL PROCEDURES:
- STARR
- Modified Delorme's Procedure

Aims

- To assess the safety and efficiency of STARR compared to modified Delorme's procedure in treatment of obstructed defecation syndrome
METHODS

- Prospective randomized control trial
- 60 patients with obstructed defecation associated with rectocele and/or rectal intussusception
- Patients were randomly allocated into two groups
  - Group I: 30 patients modified Delorme's procedure
  - Group II: 30 patients subjected to STARR
- Informed consent was obtained from each patient

Preoperative evaluation included:

- Clinical assessment
- Obstructed defecation syndrome score
- Proctoscopy
- Colon transit time
- Anorectal manometry
- Dynamic MRI
Inclusion criteria

- Patients with an ODS-S $\geq$ 12
- Recto anal intussusception $>$ 10 mm and/or rectocele extending $\geq$ 2 cm
- Failure of 6 months medical therapy
- Failure biofeedback-performed for 8 weeks

Exclusion criteria

- Below 18 years, and above 70 year
- Previous anorectal surgery
- Intestinal inertia
- Anismus
- II/III degree genital prolapse
- Symptomatic cystocele
- Contributing abnormality (stricture, tumor or polyp)
- Absent rectoanal inhibitory reflex
Follow up

Follow up for all patients was done for at least a year:

- Clinical assessment
- Constipation scoring system at 3, 6 months’, one, and two years post operatively.
- Anorectal Manometry at one year
- Dynamic MRI at one year

Results

- 167 patients with chronic constipation.
- 35 patients showed normal colon transit time
- 56 patients showed slow colonic transit time
- 76 patients had functional outlet obstruction
- 15 patients absent recto anal inhibitory reflex
- one patient lost in early follow up
Results

- 60 patients were included in the current study
- 22 patients (36.67%) were men
- 38 were women (63.33%)
- Mean age was 49.8 years for group I and 54 ± 9 for group II

<table>
<thead>
<tr>
<th>Table I Clinical presentations of the two study groups n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Mean age (mean ± SD ) year</td>
</tr>
<tr>
<td>Duration of constipation &gt; 10 years</td>
</tr>
<tr>
<td>Straining</td>
</tr>
<tr>
<td>Hard stools</td>
</tr>
<tr>
<td>Incomplete evacuation</td>
</tr>
<tr>
<td>Anal blockage</td>
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<tr>
<td>Digital facilitation</td>
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<tr>
<td>Laxatives</td>
</tr>
<tr>
<td>Rectal bleeding</td>
</tr>
<tr>
<td>Rectocele &gt; 3 cm</td>
</tr>
<tr>
<td>Rectal intussusception</td>
</tr>
<tr>
<td>Both rectocele and intussusception</td>
</tr>
</tbody>
</table>

SD = standard deviation
Results

- Pretreatment distribution of patients according to obstructed defecation syndrome score

<table>
<thead>
<tr>
<th>Obstructed defecation syndrome score</th>
<th>Group I (n=30)</th>
<th>Group II (n=30)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>12–14</td>
<td>n=6, %20</td>
<td>n=5, %16.7</td>
<td>1.0000</td>
</tr>
<tr>
<td>15–17</td>
<td>n=14, %46.7</td>
<td>n=13, %43.3</td>
<td>1.0000</td>
</tr>
<tr>
<td>18–20</td>
<td>n=10, %33.3</td>
<td>n=12, %40</td>
<td>0.8053</td>
</tr>
</tbody>
</table>

Results

- Preoperative and postoperative obstructed defecation scoring

<table>
<thead>
<tr>
<th>Signs and symptoms</th>
<th>Group</th>
<th>OBID score</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preoperative</td>
<td>I</td>
<td>16.3 ± 2.3</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>16.3 ± 2.1</td>
<td></td>
</tr>
<tr>
<td>3 months</td>
<td>I</td>
<td>6.3 ± 3.8</td>
<td>0.6346</td>
</tr>
<tr>
<td>Follow up</td>
<td>II</td>
<td>6.8 ± 4.2</td>
<td></td>
</tr>
<tr>
<td>6 months</td>
<td>I</td>
<td>6.1 ± 2.9</td>
<td>0.0165*</td>
</tr>
<tr>
<td>Follow up</td>
<td>II</td>
<td>7.8 ± 4.5</td>
<td></td>
</tr>
<tr>
<td>One year</td>
<td>I</td>
<td>6.0 ± 2.9</td>
<td>0.0655*</td>
</tr>
<tr>
<td>Follow up</td>
<td>II</td>
<td>7.9 ± 4.4</td>
<td></td>
</tr>
<tr>
<td>Two years</td>
<td>I</td>
<td>3.9 ± 3.0</td>
<td>0.0290*</td>
</tr>
<tr>
<td>Follow up</td>
<td>II</td>
<td>8.1 ± 4.3</td>
<td></td>
</tr>
</tbody>
</table>

Values are expressed as means, with standard deviations in parentheses. * statistically significant difference.
Results

- Preoperative and postoperative constipation scoring system according to Agachan–Wexner Constipation Scoring System

![Preoperative and postoperative constipation scoring system](image)

Results

- Preoperative and postoperative Dynamic MRI data

![Preoperative and postoperative Dynamic MRI data](image)
Results

- Anal manometry in the studied patients

### Complications

- No mortality or major complications

<table>
<thead>
<tr>
<th></th>
<th>Modified Delorme’s</th>
<th>STARR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute urinary retention</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Bleeding</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Mild perineal hemotoma</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>
Conclusion

According to the present study, STARR and modified Delorme's procedure seemed to be a safe and effective treatment for ODS but after one year the improvement in the symptoms became significantly better after modified Delorme's procedure than after STARR

THANK YOU