Introduction

The Hirschsprung’s disease (HD) is characterized by absence of ganglion cells in the Myenteric and Meissners plexus’ with nerve bundle hyperplasia. The surgery for HD is changed from multistage surgery to single stage. The present study compared Duhamel and endorectal pull through in hirschsprung disease.

Materials & Methods: The present study was conducted on 48 patients with Hirschsprung’s disease of both genders. Patients were divided into 2 groups of 24 each. Group I patients underwent Modified Duhamel’s procedure and group II patients underwent transanal endorectal pull-through procedure. Parameters such as blood loss, operating time and intra-operative complications etc. were recorded.

Results: Group I patients underwent Modified Duhamel’s procedure and group II patients underwent transanal endorectal pull-through procedure. Mean operative time in group I was 146.2 minutes and in group II was 143.6 minutes, recovery days were 20.4 and 19.1 in both groups and hospital stay was 13.7 days and 12.8 days respectively. The difference was non-significant ($P > 0.05$). Blood loss was seen in 2 and 3 in group I and II respectively, continence in 2 and 1 in both genders respectively and frequent stool passing in 3 and 2 in group I and II respectively. The difference was non-significant ($P > 0.05$).

Conclusion: Authors found both techniques equally affective in management of cases. The choice of treatment depends upon surgeon’s choice and conditions.

Keywords: Endo rectal, Duhamel’s, hirschsprung’s disease
Results

Table 1: Age distribution of patients in both the groups

<table>
<thead>
<tr>
<th>Age (in years)</th>
<th>Group 1</th>
<th>Group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ± SD</td>
<td>36.2 ± 12.8</td>
<td>14.4 ± 8.2</td>
</tr>
<tr>
<td>t value</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>p value</td>
<td>0.012</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Distribution of patients

<table>
<thead>
<tr>
<th>Groups</th>
<th>Total-48</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I (Duhamel’s)</td>
<td>24</td>
</tr>
<tr>
<td>Group II (Transanal endorectal pull-through)</td>
<td>24</td>
</tr>
</tbody>
</table>

Table 2 shows that group I patients underwent Modified Duhamel’s procedure and group II patients underwent transanal endorectal pull-through procedure.

Table 3: Comparison of parameters

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Group I</th>
<th>Group II</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operative time (min)</td>
<td>146.2</td>
<td>143.6</td>
<td>0.91</td>
</tr>
<tr>
<td>Recovery period (day)</td>
<td>20.4</td>
<td>19.1</td>
<td>0.93</td>
</tr>
<tr>
<td>Hospital stay (day)</td>
<td>13.7</td>
<td>12.8</td>
<td>0.71</td>
</tr>
</tbody>
</table>

Table 3, graph I shows that mean operative time in group I was 146.2 minutes and in group II was 143.6 minutes, recovery days were 20.4 and 19.1 in both groups and hospital stay was 13.7 days and 12.8 days respectively. The difference was non-significant (P>0.05).

Graph I: Comparison of parameters

Graph II: Clinical features

Table 4: Clinical features

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Group I</th>
<th>Group II</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood loss</td>
<td>2</td>
<td>3</td>
<td>0.95</td>
</tr>
<tr>
<td>Continence</td>
<td>2</td>
<td>1</td>
<td>0.90</td>
</tr>
<tr>
<td>Frequent stool passing</td>
<td>3</td>
<td>2</td>
<td>0.78</td>
</tr>
</tbody>
</table>

Table 4, graph II shows that blood loss was seen in 2 and 3 in group I and II respective, continence in 2 and 1 in both genders respectively and frequent stool passing in 3 and 2 in group I and II respectively. The difference was non-significant (P>0.05).

Discussion

The incidence of HD is 1 in 5,000 live births. The HD was first described in 1886, since than many procedures has been described for its management [5]. In recent years laparoscopy has evolved in the management of HD from extramucosal biopsy to primary definitive management. Drawbacks to this procedure were the lack of seromuscular guiding biopsies, which results in removing an unnecessarily large or small segment of bowel [6]. Further, mobilizing the rectum without dissection of the mesentery and peritoneal reflections makes this technically difficult and colonic anastomosis under tension with absence of the natural anorectal angle. The Duhamel operation is best suited for a “failed” Swenson operation, long-segment HD and total colonic aganglionosis. It is also useful in cases of difficult mucosectomy viz repetitive attack of enterocolitis make the dissection difficult and grossly dilated hypertrophic rectum [7].

The present study compared Duhamel and endorectal pull through in hirschsprung disease.

In present study, group I patients underwent Modified Duhamel’s procedure and group II patients underwent transanal endorectal pull-through procedure. Singh et al. [8] found that mean age of surgery was 6.0±0.23 months comparable in both groups (ranged 3 m-5 yrs). Mean operative time, blood loss and hospital stay with range were 80±0.30 (70-100 minutes), 50±0.20 (40-90 ml) and 6±0.21 (3-12 days) less in LADPT cases compared with open Duhamel (p value .008, 0.0067 and .009 respectively). Per-operative one left ureteric injury occurred in LADPT. In one year of follow-up revision LADPT (for neuronal intestinal dysplasia) and reexploration due to small bowel stricture were needed in one patient each, there was one death due to fulminant enterocolitis.

We found that mean operative time in group I was 146.2
minutes and in group II was 143.6 minutes, recovery days were 
20.4 and 19.1 in both groups and hospital stay was 13.7 days and 
12.8 days respectively. Antao et al. conducted comparative 
study between transanal endorectal pull-through and modified 
Duhamel’s procedure in management of Hirschsprung’s disease. 
This randomized prospective study was done on 20 patients with 
Hirschsprung’s disease during the period from January 2016 to 
January 2018, group a included 10 patients underwent modified 
Duhamel’s procedure compared to group B 10 patients 
underwent trans-anal endorectal pull-through procedure. The 
two techniques were nearly equivalent in the post-operative 
outcomes. We observed that blood loss was seen in 2 and 3 in group I and 
II respectively, continence in 2 and 1 in both genders 
respectively and frequent stool passing in 3 and 2 in group I and 
II respectively. Hadidi et al. found that mean ages at surgery 
were 4.67, 14.61, and 13.28 months, respectively. Patients in the 
LTEPT group had significant shorter operating times (195 
versus 257 versus 291 minutes, P = .03), earlier start of feeding 
(1.2 versus 3.1 versus 4.7 days, P<.01), and shorter length of 
hospital stay (4.4 versus 6.8 versus 9.7 days, P<.011). Overall 
complications rate was lower in the LTEPT (14%) than in the 
LSD (31.2%) and LTD (29.7%) groups. Postoperative 
enterocolitis incidence was 3%-4% in the Duhamel groups and 
none in LTEPT. Long-term outcome showed less constipation 
and better continence for age in the LTEPT group at the 1-year 
follow-up.
The most common early complications occurred during the first 
month following surgery; were anastomotic leakage, wound 
infection, hemorrhage and anastomotic stricture. In present study 
the most common early complication after Modified Duhamel’s 
was anastomotic leakage that was treated conservatively in 2 
patients and required colostomy in one patient. 
Arts et al. found that the experience of the main surgeon has a 
major effect on the long-term out-comes after HD operations. Conclusion 
Authors found both techniques equally affective in management of 
cases. The choice of treatment depends upon surgeon’s choice 
and conditions.

References
1. Georgeson KE, Fuenfer MM, Hardin WD. Primary 
laparoscopic pull-through for Hirschsprung’s disease in 
2. Keckler SJ, Yang JC, Fraser JD et al. Contemporary practice 
patterns in the surgical management of Hirschsprung’s 
3. Soave F. A new surgical technique for treatment of 
5. Georgeson KE, Robertson DJ. Laparoscopic-assisted 
approaches for the definitive surgery for Hirschsprung’s 
6. De La Torre L, Ortega A. Transanal versus open endorectal 
laparoscopic Duhamel pull-through for Hirschsprung disease 
2007; 17:119-123.
8. Singh S, Wakhlu A, Ahmad I, Srivastava NK. The 
Laparoscopic Assisted Duhamel Pull through Procedure for

Hirschsprung’s Disease: Our Technique and Short Term 
9. Antao B, Roberts J. Laparoscopic-assisted transanal 
endorectal coloanal anastomosis for Hirschsprung’s disease. 
10. Hadidi A. Transanal endorectal pull-through for 
Hirschsprung’s disease. Experience with 68 patients. J 
11. Arts E, Botden S, Lacher M et al. Duhamel versus transanal 
endorectal pull through (TERPT) for the surgical treatment 
20(10):677-682.