Late hormonal function after testicular torsion

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Methods

Twenty patients were prospectively evaluated at mean follow-up of five years after testicular torsion. The mean age at study was 13.6 years. Patients were divided into two groups according to the type of treatment.

Group 1 was composed of patients treated with orchiectomy; group 2 patients with detorsion and orchidopexy.

Patients were studied at follow-up with physical examination, testicular ultrasonography, semen analysis and hormonal profile.

Serum basal FSH, LH and testosterone were within normal range, similarly, the atrophic remnant taken out in two cases.

In twelve cases the gonad was considered still viable at the time of operation and a detorsion was fixed (group 2).

In eight patients were treated with orchiectomy for necrosis of the gonad (group 1). In twelve cases the gonad was considered still viable at the time of operation and after detorsion was fixed (group 2).

In the group 2 six patients (50%) had subsequently atrophy of the fixed testis and the atrophic remnant taken out in two cases.

In our study no significant difference was observed in term of fertility index between the group with orchiectomy and fixation and the group with orchiectomy, in terms of fertility index or inhibin B values.

Conclusions

Our study has demonstrated that both exocrine and endocrine function could be compromised in the late follow-up of the patients after torsion of the testis.

We could not demonstrate any significant variation between the group treated with detorsion and fixation and the group with orchiectomy, in terms of fertility index or inhibin B values.

We confirmed a role of Inhibin B as a marker of Sertoli cell and germinal function since it is significantly reduced and correlates with testosterone production and testis volume in patients after torsion of the testis in which hormonal profile has been reported to be usually within normal ranges.

In our study no significant difference was observed in term of fertility index between the detorsion and the orchiectomy group.

According to this results testicular torsion is a surgical emergency that is responsible for late impairment of exocrine and endocrine function.

Close early and late follow-up are needed to define the natural history of the gonad after detorsion.

Results

Eight patients were treated with orchidectomy for necrosis of the gonad (group 1).

In twelve cases the gonad was considered still viable at the time of operation and after detorsion was fixed (group 2).

In the group 2 six patients (50%) had subsequently atrophy of the fixed testis and the atrophic remnant taken out in two cases.

The serum basal FSH, LH and testosterone were within normal range, similarly, the FSH and LH values after stimulation with GnRH.

Inhibin B levels were significantly reduced in the two groups compared to the control (34.5 pg/ml ± 5.2 vs 63.9 ng/ml ± 12.8 (p= 0.02), inhibin values were not significantly different between the orchiectomy group (41.3 pg/ml ± 9.7) and the group that underwent detorsion (30.4 pg/ml ± 5.9).

The semen analysis performed in over 18 years old boys revealed a significant reduced fertility index according to the W.H.O. criteria in both groups.

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>FSH (mIU/ml)</th>
<th>LH (mIU/ml)</th>
<th>Testosterone (ng/dl)</th>
<th>Inhibin B (pg/ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>6.2 ± 1.2</td>
<td>5.6 ± 1.4</td>
<td>505 ± 129</td>
<td>41.3 ± 9.7</td>
</tr>
<tr>
<td>Orchiectomy</td>
<td>2.89 ± 0.6</td>
<td>2.24 ± 0.56</td>
<td>417.1 ± 107</td>
<td>30.4 ± 5.9</td>
</tr>
<tr>
<td>Detorsion</td>
<td>7.81 ± 1.4</td>
<td>17.3 ± 3.8</td>
<td>417.1 ± 107</td>
<td>30.4 ± 5.9</td>
</tr>
</tbody>
</table>

Conclusions

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We could not demonstrate any significant variation between the group treated with detorsion and fixation and the group with orchiectomy, in terms of fertility index or inhibin B values.

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