Idiopathic Intracranial Hypertension in Atypical Demographics

Aaditeya Jhaveri, Laura Donaldson, Jonathan Miceli, Edward Margolin

Medicine, University of Toronto

Aaditeya Jhaveri

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OBJECTIVE

• To compare: typical presentation (women under 40 with elevated BMI) to atypical presentation [men, women diagnosed above 40, and normal BMI]

Methods

• A retrospective chart review of patients in two tertiary neuro-ophtalmology practices at UofT between 2016 and 2021

• Symptoms at presentation (headache, pulsatile tinnitus, transient visual obscurations, ocular examination findings at presentation and follow-up were reviewed, & MRI and lumbar puncture results

• Each atypical group was compared to the typical group using chi-squared testing, ANOVA, and post-hoc comparisons with Bonferroni corrections

Introduction

• Idiopathic intracranial hypertension (IIH) is the most common cause of papilledema; mainly affects women of reproductive age with elevated body mass index (BMI)

• The strong predilection for affecting women with elevated BMI suggests: role of estrogen synthesis in adipose tissue

• However, only a small minority of young women with normal BMI develop IIH

• Individuals of any age, gender or body type can also be affected

• Atypical patients may have a different underlying mechanism of IIH

• Gap in literature: only limited small case series

Results and Discussion

Overall Analysis

• 193 typical patients; 50 atypical patients included (divided into: men, older patients, patients with normal BMI)

• No difference in presenting symptoms, LP pressure, and RNFL thickness between both groups

• Older patients presented with headache less (42.9% vs 77.2%)

• Mean deviation on OCT significantly worse in male patients

• Final visual field outcome: was significantly predicted by age and visual field at presentation

IIH in Men

• Worse visual outcomes

• Diagnosed at an older age: possibly due to referral bias as IIH is not considered

• Higher incidence of incidental papilledema

• Final visual outcome: Delay in diagnosis could be causing worse visual outcomes

IIH in Older Patients

• Low prevalence of headaches on initial presentation

• No difference in other symptoms and visual field loss compared to typical group

• Regression analysis: older age at diagnosis indicated worse visual field outcomes

• Final visual outcome: was not different between older patients and typical group

• Suggests no specific age cut-off for being at risk of poorer visual outcomes

IIH in Patients with Normal BMI

• Diagnosed at an older age in patients with normal BMI

• Final visual outcomes: equivalent with typical group

Results (cnt’d)

Results and Discussion

Table 1. Clinical presentation of patients with idiopathic intracranial hypertension

<table>
<thead>
<tr>
<th></th>
<th>Typical</th>
<th>Male</th>
<th>Older</th>
<th>Normal BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>193</td>
<td>17</td>
<td>28</td>
<td>48</td>
</tr>
<tr>
<td>Sex</td>
<td>34.9±5.8</td>
<td>36.5±11.2</td>
<td>32.9±6.9</td>
<td>34.6±4.3***</td>
</tr>
<tr>
<td>Age</td>
<td>27.3±5.6</td>
<td>37.2±11.8***</td>
<td>46.8±7.5***</td>
<td>32.3±9.8*</td>
</tr>
<tr>
<td>Headache</td>
<td>149(77.2)</td>
<td>12(4.2)</td>
<td>71(43.7)*</td>
<td>14(73.7)</td>
</tr>
<tr>
<td>LP opening pressure</td>
<td>37.0±9.2(n=99)</td>
<td>34.1±9.1(n=17)</td>
<td>32.2±8.4(n=27)</td>
<td>32.5±7.5(n=16)</td>
</tr>
<tr>
<td>Mean RNFL</td>
<td>166.2±87.8</td>
<td>158.7±109.8</td>
<td>169.0±86.1</td>
<td>151.3±111.2</td>
</tr>
<tr>
<td>Mean deviation on VF</td>
<td>-4.5±5.5</td>
<td>-10.1±10.40</td>
<td>-5.02±6.74</td>
<td>-5.06±6.75</td>
</tr>
</tbody>
</table>

Table 2. Outcomes in patients with idiopathic intracranial hypertension

<table>
<thead>
<tr>
<th></th>
<th>Typical</th>
<th>Male</th>
<th>Older</th>
<th>Normal BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean follow-up (months)</td>
<td>20.3±20.8</td>
<td>17.4±21.1</td>
<td>30.0±25.5</td>
<td>25.3±21.4</td>
</tr>
<tr>
<td>Mean RNFL thickness</td>
<td>117.4±46.2</td>
<td>110.6±38.5</td>
<td>111.7±32.8</td>
<td>102.3±22.2</td>
</tr>
<tr>
<td>Mean deviation on VF</td>
<td>-5.7±7.7</td>
<td>-9.7±6.3</td>
<td>-8.0±4.9</td>
<td>-3.96±4.93</td>
</tr>
</tbody>
</table>

Table 3. Predictors of final mean deviation on visual fields in patients with idiopathic intracranial hypertension; ***p<0.001, **p<0.01, *p<0.05

Conclusions

In all demographics, presentation and clinical course of IIH is similar

Specifically, men and normal BMI patients are diagnosed at later age

Most important predictor of final visual outcome: mean deviation on visual field at initial presentation

References