Electroacupuncture in the treatment of a ganglion of the wrist – a case report

İbrahim Tekeoğlu, Ali Doğan

Abstract
A ganglion is a cystic swelling that occurs most commonly in women. Recurrence is possible after conservative or surgical treatment. A novel method of therapy, electroacupuncture stimulation, was performed in a 53 year old woman with a large, recurrent dorsal wrist ganglion. After treatment it rapidly disappeared and there was no recurrence during the one year follow-up period. Although the mechanism is obscure, it is our impression that electroacupuncture may have a local action on such cysts in addition to needle drainage.

Keywords
Electroacupuncture, ganglion, wrist.

Description of the case
The patient was a 53 year old woman from the rural part of the city. She had had a large swelling on her right wrist for five years (Figure 1). She worked in a small agricultural unit, dealing with dairy products. Her clinical examination and x ray films revealed osteoarthritis of the knee, and lumbar spinal degenerative disc disease. Routine laboratory tests were within the normal range. The orthopaedic surgeon examined the patient and suggested surgical excision of the ganglion. Before making up her mind for surgery she accepted electroacupuncture treatment.

One needle (silver, 50mm length and 0.30mm diameter, Aros Medical, Turkey) was inserted through the ganglion and the tip of the needle was directed towards the wrist joint. A second one was inserted on the point LI11 near the elbow. Galvanic current was used for electrostimulation (pulse frequency 5Hz, EA-Galvanic Stimulator, Aros Medical, Turkey). The negative pole was attached to the needle in the ganglion, and the positive pole to the needle at LI11. The intensity of current was increased to the highest that could be tolerated by the patient.

We took images of the ganglion and measured the circumference of right and left wrist from the

Figure 1  This is the appearance of the large recurrent ganglion on the dorsum of the wrist.
tip of ulnar styloid bone and longitudinal and transverse of the ganglion. The measurements were taken before treatment, after two weeks and six weeks later (Figure 2). There were four treatment sessions in two weeks.

As seen in the measurements (Tables 1 and 2), the ganglion rapidly reduced in size after electroacupuncture stimulation. One year later, the patient had no complaint and there was no recurrence (Figure 3).
Discussion

A ganglion is a cystic swelling that may be found near, and is often attached to, a tendon sheath or joint capsule and is believed to be derived from these structures. A ganglion is the most common soft tumour of the hands, accounting for 50–75% of all masses, and occurring most commonly in women between the ages of 20 and 40.\(^1\)

A slender connection to a synovial joint may be demonstrated histologically or radiographically. The most common location for a ganglion is the dorsum of the wrist, arising from and attached to the capsule of the scapholunate joint (60–70% of all ganglia).\(^2\)

The pathogenesis of ganglia is poorly understood. In most instances there is no definite relation to trauma; generally only about 10% of patients report an antecedent trauma and a link can rarely be proved.\(^1-3\)

For treatment of ganglia, application of direct pressure, simple needle aspiration, needle puncture and injections of hyaluronidase and cortisone or sclerosing agents can be used as non-surgical interventions.\(^4\) Surgical excision is indicated if the ganglion recurs or causes cosmetic discomfort. The treatment of wrist ganglia by electroacupuncture is new in conservative methods. In this report we describe how a large, chronic, recurrent dorsal wrist ganglion decreased in size rapidly and has not recurred in 12 months follow up.

Dogo and colleagues treated a wrist ganglion using hypertonic saline as a sclerosant. With this method, the most common adverse effects, seen in 50% of patients, were swelling of the wrist and pain in the dorsum of the hand, which needed analgesia with paracetamol. They suggested that hypertonic saline injection as sclerosant is a cheaper and less invasive method of treating ganglia than surgery, though it has hitherto been characterised by a high recurrence rate of up to 23%. Shih and colleagues pointed out that recurrence of ganglia after open surgery is about 15%, but the recurrence rate with arthroscopic surgery was reported to be lower. In the present case, the rapid disappearance of the ganglion could be due to natural resolution, or the needle insertion leading to fluid leakage, or specific local effects of electrostimulation. Our clinical experience suggests that electroacupuncture may have specific effects on such cysts, which could include an acute local vasoconstriction followed by vasodilation from release of mediators such as bradykinin, acetylcholine, and leukotrienes, or changes in tissue metabolism such as cell membrane transport of protein-like substances.

In the literature we could not find any previous article describing the effects of electroacupuncture on ganglia. The known mechanisms of action of electroacupuncture include the release of endorphins and corticosteroids, and it is worth noting that local injection of steroids is used to treat hypertrophied tissues. The mechanism for the present clinical observation is unknown, and, if confirmed by further studies, we suggest that it might be promising to investigate the possible sclerosant effect of galvanic current.

Conclusion

Although there have been many conservative treatments for ganglia such as application of direct pressure, simple needle aspiration, needle punctures and injections of sclerosing agents, electroacupuncture seems worth trying as a cheap and non-invasive method.

Table 1: Measurements of ganglion in millimeters

<table>
<thead>
<tr>
<th></th>
<th>Longitudinal</th>
<th>Transverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before treatment</td>
<td>55</td>
<td>45</td>
</tr>
<tr>
<td>After two weeks</td>
<td>40</td>
<td>35</td>
</tr>
<tr>
<td>After six weeks</td>
<td>37</td>
<td>28</td>
</tr>
<tr>
<td>After one year</td>
<td>15</td>
<td>13</td>
</tr>
</tbody>
</table>

Table 2: Circumference of wrists in millimeters

<table>
<thead>
<tr>
<th></th>
<th>Right wrist</th>
<th>Left wrist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before treatment</td>
<td>190</td>
<td>180</td>
</tr>
<tr>
<td>After two weeks</td>
<td>185</td>
<td>180</td>
</tr>
<tr>
<td>After six weeks</td>
<td>183</td>
<td>180</td>
</tr>
<tr>
<td>After one year</td>
<td>181</td>
<td>180</td>
</tr>
</tbody>
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Reference list

Case report


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