factor in these various groups one is struck by the fact that in the majority of cases the ulnar nerve is unprotected by any bony parapet at the bend of the elbow, or so badly protected that during extension and flexion of that joint it is apt to slip in and out of its proper position. During flexion especially it may be exposed to friction and pressure on the internal condyle and the production of an interstitial neuritis. This moving contact with a bony surface is probably an important factor in producing the symptoms associated with a cervical rib, although I do not think it has been shown that in the latter case the involvement of the ulnar nerve is due to the same cause.

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Finally, it would be instructive to learn the views of members of this Section in regard to the best procedure in connexion with these cases of traumatic neuritis. I have seen fairly good results from merely dividing the connective tissue strands by means of longitudinal incisions, but I have become still more impressed with the advantages of placing the nerve in front of the joint and so ensuring its complete freedom. Possibly a combination of both measures may be the ideal treatment.

HEREDITARY PERFORATING ULCER OF THE FOOT.

By E. P. HICKS, M.B. CAMB., M.R.C.S., D.T.M. & H., Late House Physician to St. Bartholomew's Hospital.

In November, 1920, a woman (15)1 came under my observation suffering from a perforating ulcer of the foot, a condition which she said was hereditary in her family. The following description is based chiefly on personal examination, partly on reference to hospital records.

The disease occurs in a family of which all the members were born in London and live in London, four generations, including ten who suffer from the disease. The affected members of the first and second generations are dead, and there are no medical records of the last years of their lives; those of the third generation have not yet progressed far, so that the picture of the later stages is not very definite. None of the fourth generation is affected, but they have not yet reached the age at which the disease appears.

AGE OF ONSET.—The first symptoms appear in early adult life; the ages recorded are "about 15 (?)", 22, 24, 31, 33, 35, 36.

There are four males and six females.

ETIOLOGY.—No cause is evident. The first sufferer was a doll-maker, and attributed his illness to his working in white lead. The disease is transmitted by both sexes.

SYMPTOMS AND SIGNS.—The first symptom complained of in all cases but one is a corn, appearing first in the big toe. After a few months the thickened corn becomes ulcerated and there is a discharge of pus and edges and purulent discharge. Soon this extends to the bone, and small pieces of bare bone are set free. There is usually no pain. Under treatment for some months the ulcers heal, but soon breaks down again, and so a process of ulceration and healing goes on for the rest of the patient's life. The process affects other toes and bones of the foot, and finally there is considerable deformity. The toes are shortened, and become flexible from loss of the phalanges, and are distorted from the normal position. In later stages the whole foot is described by relations as being shortened, but these patients are all dead, so that I have not seen them to verify the condition. Probably the tarsals and metatarsals are affected.

There is now a pause before the other symptoms appear. During this time there is little interference with the patient's comfort, or even actual pain, so that he is unable to walk about freely, but more often his life is quite normal except for the irksome necessity of repeated treatment to his feet. After an interval varying from a few months to several years, he suffers from shooting pains which may attack any part of the body. The legs and shoulders are most affected, and sometimes the head. Each pain is of very short duration, so that it has been diagnosed as the lightning pain of tabes dorsalis. The skin is too tender to gentle pressure, but one patient (15) says that she obtains relief by firmly grasping and squeezing the affected area. The pain is often very severe. The children of the original sufferer (1) say that they knew when he was returning from work because they could hear his groans when he was still some distance away. At about the same time as the onset of the pains the patient begins to suffer from deafness. This is bilateral, and slowly progressive without remission, so that the patient is said to become finally completely deaf.

If the patient is examined a few years after the beginning of the pain, and before the appearance of the ulceration of the foot, its position may be on any of the toes, but most often on the great toe, and generally below the head of the metatarsal bone, or on its inner side. The ulcer has thickened irregular edges; the discharge is purulent; bare bone may be visible in its floor, or may be felt with a probe. The surrounding area is red and swollen, and swelling may extend up the lower part of the leg. The ulcer breaks down again, and a suppuration may spread into the surrounding tissues, and these may be tender.

The reflexes of the lower limbs are lost. The ankle-jerks disappear first, later the knee-jerks. In no case which I have examined have been able to obtain a plantar response. The abdominal reflexes are preserved, at any rate in the earlier stages. The reflexes of the arm are normal. The pupils always react to light and accommodation.

GEOGRAPHICAL TABLE.

<table>
<thead>
<tr>
<th>Genealogical Table</th>
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<tr>
<td>17, 18, 19 died in childhood, sex not given. 31, 32, 33, 34m in italics.</td>
</tr>
</tbody>
</table>
The cranial nerves, with the exception of the auditory nerve, are normal. There is no nystagmus. The fundi are normal. The hearing of one patient (20) has been examined by Mr. C. E. West, aural surgeon at St. Bartholomew's Hospital. He says that his findings are negative, and that he had observed it in several cases of syringomyelia. In another case (9), also examined at St. Bartholomew's Hospital, there was an accumulation of wax sufficient to account for the deafness.

Sensation in the arms is normal. If the sensation of the feet is tested, when the acute condition has subsided definite changes are found. At first tactile sensation is lost over the first toe and interdigital cleft. The sensations of pain and heat and cold are impaired over the other area, so that definite dissociative anaesthesia. These changes must be confined to the feet for some years, because in only one of the patients I have examined has it been more extensive. This was a woman (9), who had first suffered from ulceration 17 years before. Loss of tactile sensation was confined to the anterior part of the feet, but loss of painful and thermal sensation extended up the lower part of the leg. Another woman (3) was examined in 1910, a year before her death and 24 years after the onset of the disease. Her notes record "loss of sensation to half-way up leg."

Ataxia was definitely absent in two cases (15 and 21), and in one case (2) the notes state "gait is uncertain, but not typically atactic." In the others there is no record. I found Rombergism in one case (9); it is noted as absent in three (3, 15, and 20); in another (2) the patient "is unable to stand with eyes shut and heels together." There was a slight deficiency of motor power in two cases (2 and 3), none in a third (15). The vesical and rectal control are normal. The Wassermann reaction of the blood has been taken in two cases (2 and 3) it was negative, in one (15) it was first doubtful and later negative. In no case has the cerebro-spinal fluid been examined.

In the final stages ulceration and deformity of the foot gradually progress. The pain becomes very severe, deafness increases, and the patient is confined to bed. The death certificates of the four who have died are given below.

**Conclusions.**

1. The disease is hereditary. Its main symptoms are perforating ulcers of the feet, shooting pains in various parts of the body, and deafness.

2. It is progressive and shortens life.

3. It corresponds to no disease previously described, but bears some resemblance to syringomyelia.

**Cases.**

**Case 1.** Male, doll-maker. Worked in white lead. His parents were free from ulcers, shooting pains, and deafness; he himself suffered from ulcers of the feet, "rheumatism" (incidentally perforating ulcers), and was very deaf. For some years before his death his feet were shortened and his legs "mottled"; arms not affected. He died in 1874, aged 51. Death certificate: "Embolism and gangrene," according to his son's statement. This account is based on the statements of his descendants, as no hospital records are available.

**Case 2.** Male, brass-finisher. Symptoms began in 1885 at the age of 31. He had ulcers in both feet, which repeatedly healed and broke down; at the age of 35, the base of the right foot was amputated. At the age of 44 part of the ungual phalanx of the left great toe was removed, owing to persistent ulceration. He lost the use of his right hand, but retained his sight, and was able to watch placed close to ear or on mastoid process. He died in 1906, aged 48. Death certificate: "Tabes mesenterica."

**Case 3.** Female. In 1897, aged 33, began to suffer from shooting pains in the feet. Aged 39, began to get deaf. Aged 41, perforating ulcers under each great toe noted. Pupils reacted to light and accommodation; loss of knee-jerks; anaesthesia in lower part of legs. Gait unsteady; no Rombergism; Wassermann reaction negative. Died at the age of 46. Death certificate: "Perforating ulcer of foot; systemic sclerosis.

**Case 4.** Female. The disease began at age of 30; she suffered from ulcers of the feet, pain in the feet and head, and deafness. She died in 1905, aged 46. Death certificate: "Perforating ulcer of right foot, embolism and gangrene," according to Mr. C. E. West. There is no mention of deafness. This account is based on the statements of her husband and children, as no hospital records are available.

**Case 5.** Female. From about the age of 15 had ulcers on the soles of the feet, which repeatedly healed and broke down again. In 1910, aged 32, she was admitted to hospital at the suggestion of her husband, who had noticed that her gait was unsteady, as though she could not stand with eyes shut and heels together. She had ulcers in both feet, and was unable to follow her watch placed close to ear or on mastoid process. The Wassermann reaction of the blood was negative, no spina bifida, no tabes. August, 1921, she wrote saying she still had ulcers of the feet, and now has also shooting pains and deafness.

**Case 9.** Female. In 1904, aged 22, first noticed ulceration of the feet. August, 1921, right big toe showed evidence of old healed ulceration on the plantar surface; it was shorter than the left big toe. Knee- and ankle-jerks absent, supinator jerks natural, pupils reacted to light and accommodation, sensory examination normal. "sénilité physiologique prématurée de certaines sinistres systèmes organiques," Its exact nature can only be settled by post-mortem examination.

**Case 13.** Male, October 1921, aged 32, slightly deaf for some months. For two months had black callosity over the base of right foot. No signs of inflammation; small patches of anaesthesia round big toes, knee-jerks equal and normal, ankle-jerks absent.

**Case 15.** Female. In 1913, at the age of 24, symptoms first appeared. She had ulcers in both feet, with discharge of a small piece of bone on one occasion. Admitted to hospital November, 1920. Nothing abnormal found in mouth, fauces, pharynx, or abdomen. In 1921, marked deformity of feet; metatarsal bones, were two ulcers; below the big toe the base of the second phalanx protruded and the bone was bare. There was swelling and oedema round the ulcers. Little
Epidermoids following Prostatectomy.

The 50 cases are from a series of 55 consecutive cases operated upon at St. Peter's Hospital between April and October, 1921. On 5 of these cases, which died, the observations were incomplete, and therefore are not included. In order to determine accurately whether or not changes did occur in the epididymis as a result of prostatectomy, a careful note was made in each case of the existing condition of the scrotal contents before operation, and with a view to deter-


In all cases other than acute forms the patient complains of nothing in relation to the scrotal contents, and unless these are palpated from time to time during the convalescence, and the findings compared with those existing before operation, the changes may be unnoticed; not until the tunica vaginalis is distended with fluid does the patient complain of testicular pain, so that quite marked changes may pass unrecognised. Milder forms generally reach their maximum about the end of the second week after operation, when subsidence begins. On the other hand, such a case may slowly progress to the acute stage, and even go on to pus formation in the third week or later; or later still, there may be recurring attacks of more or less acute epididymitis. But the condition may, and generally does, remain throughout in one of the earlier stages. The majority fall under one of the following three types.

Less Acute Variety.—The less acute forms of epididymitis are of interest because: (a) They may progress slowly to the acute stage; (b) they may be the cause of recurrent attacks of epididymitis months later; (c) they show the comparative frequency of infection of the epididymis as a sequence of prostatectomy.

Acute Variety.—This is of more serious import because: (a) It is likely to prolong the convalescence of the patient; (b) it is very likely to give rise to recurrent attacks of epididymitis later on; (c) it may progress to suppuration. When suppuration supervenes: (1) There is toxemia; (2) the testicle is destroyed; (3) pyaemia and death have been recorded. With regard to the mode of onset, two types have been observed—one developing rapidly and well-established by the end of the first week; the other

Epididymitis and Suprapubic Prostatectomy.

A Study of 50 Cases.

BY H. P. WINSBURY WHITE, M.B., Ch.B., F.R.C.S. Edin., Late Senior House Surgeon, St. Peter's Hospital for Stone and Other Urinary Diseases.

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3. The epididymis becomes large, hard, and firmly fixed to the testis, so that the change as a rule is more marked in the globus minor. There may be some tenderness.

4. The tunica vaginalis is distended with fluid. The epididymis is large, fixed, and tender; pain is marked, tenderness is acute, the scrotum becomes red and sometimes oedematous.

5. The previous condition goes on to pus formation in the epididymis. It involves the testicle which sloughs.

The inflammation may be unilateral or bilateral, if the latter, it is generally more advanced on one side than on the other. In 58 per cent. the infection could be made out on one side only. The greater number of cases, 67 per cent., fall into one of the first three stages into which the epididymitis has been classified. The incidence of the acute cases is shown in the table for convenience in percentage form, although the number of cases is small.

<table>
<thead>
<tr>
<th>Group</th>
<th>No. of cases</th>
<th>Inflammatory epididymitis</th>
<th>Bladder, acute epididymitis</th>
<th>Acute epididymitis</th>
<th>Suppurative epididymitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>19</td>
<td>26</td>
<td>74</td>
<td>37</td>
<td>26</td>
</tr>
<tr>
<td>2.</td>
<td>11</td>
<td>18</td>
<td>89</td>
<td>44</td>
<td>28</td>
</tr>
<tr>
<td>3.</td>
<td>15</td>
<td>15</td>
<td>85</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>4.</td>
<td>Total of three foregoing groups</td>
<td>50</td>
<td>18</td>
<td>82</td>
<td>42</td>
</tr>
<tr>
<td>5.</td>
<td>Patients whose testicles were removed in two stages</td>
<td>9</td>
<td>4</td>
<td>58</td>
<td>22</td>
</tr>
</tbody>
</table>