

spinous processes radiologically; (b) when radiologically there is no visible bony involvement.

Diagnosis and localization are easier in the former group, and generally the prognosis is worse than in the second group even with prompt treatment. Because the reticulosos seldom involve bone so extensively as the carcinomas and are generally highly radiosensitive the prognosis in these cases is better. Metastatic growths reach the spinal canal either by direct spread from an invaded vertebra, by extension from the mediastinum through an intervertebral foramen, or (uncommonly) by direct haematogenous spread to the extradural fat. Such metastases invade the dura with difficulty and seldom if ever penetrate it to gain access to the leptomeninges and the cord itself. Very rarely haematogenous metastases are deposited intrathecally in the arachnoid or the cord itself.

Until recent years paraplegia due to metastatic malignant growths tended to be managed rather inactively, though the suspected area of the spine was often irradiated in an attempt to relieve local pain. Irradiation alone may sometimes achieve worthwhile improvement but accurate localization by myelography followed by subtotal removal of the extrathecal tumour is now to be preferred. Furthermore laminectomy no longer carries any serious risks to the patient nor demands

any unusual expertise from the surgeon. In addition to providing immediate relief of cord compression a positive histological diagnosis is obtained in those cases where the nature of the metastasis is unknown. Appropriate radiotherapy and, where required, chemotherapy or endocrine therapy may be begun a few days before the sutures are removed. A more resourceful approach of this kind has resulted in an improvement of the lot of these patients—not least from the fact that they receive active nursing rather than “terminal care.”

Enthusiasm for such activity must naturally be tempered by an awareness that in many patients, perhaps a majority, little or no functional improvement will occur in the paralysed limbs or bladder. In my experience the best results have been obtained with the reticulosos, carcinoma of the prostate and breast, and some of the rarer radiosensitive tumours such as seminomas. Almost invariably poor results occur when the metastasis is from the bronchus. When a complete paraplegia is associated with vertebral collapse recovery of function is least likely to occur. Vertebral collapse associated with early or only moderately severe paraparetic symptoms and signs—before irreversible ischaemic changes have taken place in the cord—carries a rather better outlook.

(This article will be concluded next week.)

TODAY'S DRUGS

With the help of expert contributors we print in this section notes on drugs in current use.

Treatment of Menière's Disease

Menière's disease is characterized by the occurrence of attacks of vertigo in the presence of fluctuating tinnitus and of deafness which tends to progress. It affects about 1 in 1,000 of the population, with a slight predominance of males. It may begin at any age, but the maximum incidence of onset is between 40 and 60 years. While initially the attacks of vertigo may increase in frequency and severity and the deafness may progress, the disorder is in fact self-limiting, and spontaneous arrest may occur at any stage. The few cases which have been available for post-mortem examination have shown dilatation of the cochleosaccular endolymph system at the expense of the perilymph system in the fixed volume of the bony labyrinth. This is thought to be associated with biochemical changes in the perilymph and endolymph affecting particularly sodium and potassium ions and water.

Clinical Features

The first symptom in over half the cases is sudden onset of vertigo. In others this may be preceded by months or years of deafness or tinnitus. The vertigo may vary in severity and character; usually it consists of a feeling of rotation of objects or of the subject in relation to the surroundings. It may take the form of a sensation of being forced from one side to the other. Occasionally the patient may be suddenly thrown to the ground, either backwards or forwards, as though hit with a hammer. Rarely patients may experience merely a persistent feeling of unsteadiness.

The attacks may occur at intervals of months or even years. There may be premonitory symptoms such as the appearance of, or an increase in the intensity of, tinnitus, fullness in the affected ear or in the head, nausea, vomiting, prostration, faintness or even loss of consciousness, transient diplopia, or cere-

bellar dysfunction with the appearance of nystagmus. The duration of the vertigo varies from minutes to hours, and it may be followed by a period of unsteadiness. There may be a headache, usually in the occipital region. The tinnitus may be paroxysmal or constant, unilateral or bilateral, fluctuating in intensity, being worse at the times of the attacks. The deafness may also be unilateral or bilateral, usually with one side more severely affected; while progressive, it rarely becomes high-grade unless bilateral at onset. In the early stages there may be distortion of hearing.

The psychological aspects of Menière's disease are of considerable importance. As in many other conditions with an undetermined aetiology, various personality traits are alleged to predispose to it, and stress situations have been thought to trigger off attacks. While such theories remain unproved there is no doubt that attacks of vertigo, whatever their cause, lead to anxiety and even depression, the severity of which depends probably on the underlying personality of the patient. Similarly, persistent tinnitus may trigger off psychiatric symptoms in predisposed patients. This aspect of the illness is often more disabling than the actual attacks, which may be infrequent and short lived, and treatment must be directed as much to this as to the attempted reduction of the frequency and severity of the attacks.

While acute attacks are treated with vestibular and central sedatives and drugs to reduce nausea, the treatment for the prevention of attacks is more varied and its effects much more difficult to assess. There is great natural variation in the rate of progression of the illness and in the severity and frequency of the attacks of vertigo. The associated anxiety and tension are often the most disabling aspect of the illness in between the attacks, and there is no doubt that sympathy, encouragement, and firmness on the part of the physician are of great importance in the management of patients—but this adds further to the difficulty of objective assessment of the effects of various treatments. Surgical treatment is indicated in only perhaps 10% of patients, who fail to respond to medical measures and who are significantly disabled by their attacks.

Treatment of an Acute Attack

If there is time during the premonitory phase one of the vestibular sedatives such as hyoscine, promethazine, diphenhydramine, dimenhydrinate, or cyclizine should be given by mouth.

Once the vertigo has started the patient will assume the position of greatest comfort and be unwilling to move his head, as this aggravates his symptoms. It will probably be necessary then to administer one of this group of drugs by means of an intramuscular injection. Promazine hydrochloride 25 or 50 mg. can be given in this way, or prochlorperazine maleate may be given as rectal suppositories of 55 mg. or 25 mg.

In prolonged attacks resistant to such treatment stellate ganglion block with procaine may be carried out, but this procedure should be contemplated only in hospital.

Interval Treatment

Sedation with phenobarbitone 30 mg. or sodium amytal 100 to 200 mg. twice daily is preferable to long-term treatment with one of the antihistamines. If warranted, appropriate treatment should be given for depression, using perhaps a combination of amitriptyline 25 mg. and trifluoperazine 1 mg. three times a day.

The effect of vestibular sedatives such as prochlorperazine 5 mg. and thiethylperazine 10 mg. is thought to diminish if they are used continuously for long periods, and it is probably better to reserve them for shorter courses in patients with frequent attacks.

Tinnitus may produce a considerable psychological disturbance, mainly of a depressive nature, particularly in the older patient, and this often responds well to amitriptyline 25 mg. or imipramine 25 to 50 mg. three times daily. In extreme cases leucotomy has been resorted to.

For psychological reasons it is best not to restrict the lives of patients with Menière's disease, unless the attacks are very sudden, frequent, and severe. Those patients whose vertigo is of the kind which suddenly throws them to the ground should not be allowed to drive. In the others some warning symptom seems to suffice and allows them to stop safely. Work on ladders and in similar situations should, however, be forbidden in all cases.

Vasodilators

These have been used to considerable extent. There is little evidence that parenteral histamine in increasing doses is any more effective than simple nicotinic acid, which can be given by mouth on an empty stomach to increase the rate of absorption. It is usual to begin with one 50 mg. tablet daily and increase gradually by one tablet at a time until a good flushing response is obtained and the appropriate maintenance dose established.

If histamine is to be tried, then a test dose of 0.005 mg. of histamine acid phosphate should be given intradermally using a tuberculin syringe and a diluted solution of 0.1 mg./ml. If no adverse reaction occurs then 1 mg. of histamine is given intravenously in 250 ml. saline or dextrose over 90 minutes and repeated two or three times every 48 hours. A watch should be kept on the blood pressure, and vasoconstrictors must be readily available. This stage of treatment must therefore be carried out in hospital. Thereafter maintenance injections of 1:10,000 solutions of histamine base are given at weekly intervals beginning with 5 minims and increasing gradually to 25 minims until a sensation of flushing and heat is obtained.

Stellate ganglion block and even cervico-dorsal sympathectomy have been used as treatment during the intervals between attacks. Occasionally, in addition to diminishing the frequency and severity of the attacks of vertigo there may be an arrest of

the progressive deafness and occasionally even in the tinnitus. However, relapses tend to occur after two or three years, and as with other modes of treatment long term results are very difficult to assess.

Streptomycin

This has been used because of its neurotoxic effect on the labyrinth, the usual dose being 1 g. three times a day for three to four weeks. The treatment is stopped as soon as the caloric responses, tested daily, disappear in the more seriously affected labyrinth. In cases of unilateral Menière's disease the attacks may be abolished for periods of 6 to 9 months. The main side effect, ataxia, is particularly marked in the dark, and is more likely to occur in older patients and in those with relatively slight initial damage to the labyrinth. Streptomycin should not be used in patients over the age of 50 years and in those with unilateral disease. Unfortunately vestibular damage may occur even after the treatment has been stopped and the resultant ataxia may be more disabling than the original Menière's disease.

Surgical Treatment

Operation is resorted to in probably no more than 10% of patients. The main indication is failure of medical treatment to prevent marked disability from acute attacks which may be frequent, severe, and sudden, result in economic hardship through failure to maintain the patient in his employment, and may lead to severe psychoneurotic disturbances.

Numerous operations have been devised. They may be divided into radical, which result in complete destruction of the entire inner ear, and conservative, in which an attempt is made to preserve the hearing.

When the above criteria are fulfilled, conservative surgery may be considered.

- (1) In unilateral disease.
 - (a) In those with good hearing in the affected ear.
 - (b) In those with hearing on the opposite side impaired from another cause.
- (2) In bilateral disease.
 - (a) When both ears are affected early in the disease.
 - (b) When one labyrinth is destroyed before the disease appears in the second ear.
 - (c) When hearing is already poor in one ear and rapidly deteriorating in the other.

Conservative operations have consisted of drainage of the endolymphatic sac (Portmann's operation), destruction of the vestibular labyrinth by ultrasound, and vestibular neurotomy, requiring a neurosurgical operation in which the vestibular portion of the eighth nerve is cut selectively in the posterior fossa. Ultrasonic treatment may relieve the tinnitus in a proportion of the patients, but its use requires considerable technical expertise. Occasionally damage to the facial nerve, which may be transient, and to the cochlea may result. Vestibular neurotomy also sometimes results in improvement of hearing and relief of tinnitus. At the same time the patient may continue to have attacks without vertigo and eventually there may be return of both tinnitus and progressive deafness.

Following all labyrinthine operations intensive physiotherapy is essential to restore balance and re-establish confidence. The aim of the exercises is to enable the patient to move the head and eyes freely in all directions and this is achieved usually in a space of two to three weeks.

Conclusion

Treatment of Menière's disease is medical in the great majority of cases. In the acute attacks vestibular sedatives are

administered by mouth, by injection, or rectally. In prolonged severe attacks stellate ganglion block may be carried out in hospital. Interval treatment consists of psychological support and if necessary tranquillizers or antidepressants. Central sedatives, such as phenobarbitone or amylal, are more useful than prolonged courses of vestibular sedatives. Vasodilators such as nicotinic acid by mouth are probably as helpful as histamine

desensitization by injection. Stellate ganglion block and cervico-dorsal sympathectomy may have a place to play in patients with frequent attacks. Streptomycin injections may produce relief but carry the risk of permanent ataxia. Surgical treatment on the inner ear or vestibular nerve is probably indicated in less than 10% of patients in whom failure of medical treatment results in severe psychosocial disturbances.

ANY QUESTIONS?

We publish below a selection of questions and answers of general interest.

Corticosteroids and Petechial Haemorrhages

Q.—*Is the appearance of subcutaneous petechial haemorrhages, mainly on the forearms, in elderly patients on long-term corticosteroid therapy an indication that treatment should be stopped, and does it indicate a greater likelihood of a gastric or cerebral haemorrhage?*

A.—Subcutaneous petechial haemorrhages in elderly patients on long-term corticosteroid therapy seem to be just an acceleration of the ordinary petechiae observed on the hands and forearms in old people. These are due to thinning of the fibres which support the vessels, a change which will obviously be accelerated by excess circulating protein-catabolic hormone.

These changes are not paralleled in the same way in the gastrointestinal tract or the cerebral vessels. The mechanisms by which steroids reactivate peptic ulcers or induce fresh ulceration are obscure, but probably include factors such as local irritation and changes in ulcer healing.

Cerebral haemorrhage is usually due to the rise of blood pressure produced by steroid drugs. The skin lesions are not an indication in themselves to stop treatment, though they are of course commonest in patients who are receiving a heavy dose which may merit reduction on other grounds.

Pili Incarnati

Q.—*What is the cause of hairs in the neck in the shaving area growing sideways under the skin, and what can be done to prevent or treat it?*

A.—This condition is known as pili incarnati, or ingrowing hairs. It is seen most often in the beard area under the chin and on the front of the neck, but is not at all unusual on the cheeks and chin. It gives rise to an inflammatory response which is produced by hairs growing into the dermis and setting up a foreign body reaction. The papules and pustules thus produced are often mistaken for simple folliculitis of bacterial origin. At the same time secondary infection of these lesions with pyococci is not at all unusual and contributes to the clinical picture. In cases of chronic folliculitis of the beard region the direction of growth of the hairs should be carefully

ascertained, since it is easy to miss the correct diagnosis.

This oblique positioning of the hair follicle is presumably of developmental origin. Not only do some hairs grow under the skin without emerging at the surface, but many others may emerge from the follicle only to curl back towards the skin surface and penetrate it a millimetre or two away. The condition is perhaps more commonly seen in young men of the negro race.

Different methods of shaving do not seem to play any part in producing the condition, nor do they contribute to treatment. The application of an antiseptic cream such as Quinoderm once or twice daily will often bring about some improvement by controlling secondary infection. Since the underlying anatomical abnormality remains, however, this does not produce a complete cure.

In many cases the patient himself can ease out the points of the ingrowing hairs and remove them by plucking. If after they have been eased out in this way the beard is allowed to grow a complete cure can be expected. In a few cases permanent epilation of the offending hairs by electrolysis or diathermy may be indicated.

Some dermatologists seem to have obtained satisfactory results from the application of an epilating cream at intervals of perhaps a few days, but I have no personal experience of this treatment. Since it is mainly young men who complain of this condition, it seems likely that it may rectify itself in later years.

Notes and Comments

Oral Contraceptives and Lactation.—Mr. M. R. FELL (General Infirmary, Salisbury) writes: With reference to the answer to this question ("Any Question?" 31 January, p.287) your expert writes: "Only three or four cases of galactorrhoea on stopping oral contraceptives have been reported." I wish to report two further cases of galactorrhoea, one of which occurred on stopping the oral contraceptive Ovulen and in the other milk secretion occurred during Ovulen therapy but increased in amount on stopping Ovulen.

The first patient, a married woman aged 29 years, presented with a morbid fear of pregnancy and a strong psychiatric recommendation that she should be sterilized despite having had no children. She had been taking Ovulen as an oral contraceptive for three years but remained unconvinced that this form of contraception

offered the protection she required and was in continual fear of forgetting to take a pill. She was eventually sterilized and continued taking her Ovulen tablets cyclically with regular withdrawal bleeding until the eve of her operation when they were stopped. Six weeks later she presented with amenorrhoea and milk secretion and was terrified at the thought that she might be pregnant. She was not pregnant, and full investigations, including tests of thyroid function and x-ray of the sella turcica, failed to reveal any abnormality or show any cause for her primary galactorrhoea. She was given large doses of Provera (medroxyprogesterone) but failed to respond. A year after her surgical sterilization she was treated with clomiphene, which promoted vaginal bleeding and subsequently reduced the flow of milk. After two courses of clomiphene milk secretion had practically stopped and no further treatment was required.

The second patient, also a young married woman, developed secondary galactorrhoea after her second confinement. She breast-fed her first baby for six months, at the end of which time she developed a breast abscess. She elected to bottle-feed her second child, so lactation was inhibited by a five-day course of oral oestrogens. A second course of oestrogens was given a few weeks later, since milk production had become an embarrassment, and at about this time she started taking an oral contraceptive. Despite regular courses of Ovulen taken cyclically, she continued to complain of frequent intermittent attacks of breast engorgement and milk secretion for which repeated courses of oral oestrogens were administered, in addition to the Ovulen already being taken, with temporary symptomatic relief. During this time she had regular withdrawal bleeding. At the end of three years her Ovulen was stopped, the milk secretion increased and she developed secondary oligomenorrhoea. Large doses of Provera had no effect on the galactorrhoea.

The patient was fully investigated prior to intended treatment with clomiphene and was found to have bilateral cystic ovaries. A pelvic pneumogram confirmed this clinical finding and showed the presence of small areas of calcification in both cysts. A pre-operative diagnosis was made of bilateral ovarian dermoids, which were surgically removed, and though subsequent histological examination confirmed the diagnosis of ovarian dermoid cysts it also revealed the presence of follicular and lutein cysts in the walls of each. Following the removal of these tumours all milk secretion stopped.

OUR EXPERT replies: The first case is similar to others with galactorrhoea on stopping oral contraceptives successfully treated with clomiphene-induced ovulatory cycles. The second case is clearly not to be ascribed to the oral contraceptive medication, but it is interesting that while taking Ovulen the galactorrhoea was only partially suppressed and that additional oestrogen was given. This might have encouraged any tendency to cyst formation.