TOXIC AND DRUG-INDUCED NAUSEA AND VOMITING

Nausea and vomiting in patients undergoing treatment for neoplastic diseases may be related in part to the underlying illness, but often the treatment is solely responsible. Virtually all patients given nitrogen mustard preparations have nausea, and about half of these will be subject to severe vomiting, which begins one to three hours after treatment. Cyclizine and promethazine provide partial control of the nausea and vomiting that follow treatment with cytotoxic drugs, but many patients are more effectively relieved by the more potent phenothiazine derivatives. Prophylactic administration given just before the cytotoxic agent is usually desirable.

MISCELLANEOUS CAUSES

Acute vomiting and diarrhoea caused by various pathogens, many of which are assumed to be viral, constitute one of the commonest diseases in the community. Antiemetic drugs are not of value in the symptomatic control of gastroenteritis. Cyclizine, however, has a place in controlling the persistent nausea which is often such an unpleasant accompaniment of hepatitis.

Several ototoxic agents including streptomycin affect the vestibular apparatus giving rise to vertigo, nausea, and vomiting; inner ear disease including Menière's disease, neuronitis, postural vertigo, and eighth-nerve tumours may have similar effects. Destructive middle ear disease and surgical procedures on the middle ear may also damage the inner ear and result in a symptom complex in which vertigo is dominant and which is accompanied by nausea. Dizziness and nausea may be helped by antihistamine drugs such as dimenhydrinate, cyclizine, or meclizine.

Patients suffering from Menière's disease causing frequent attacks may benefit from betahistine. This histamine analogue was developed because the parenteral use of histamine reduces

the symptoms of vertigo and tinnitus in Menière's disease. Betahistine probably exerts its effect by reducing endolymphatic pressure. Antihistamines should not be used concurrently. Symptoms of nausea and headaches, as well as exacerbation of peptic ulceration, have occasionally been reported in patients receiving betahistine.

New surgical procedures are being devised to combat inner ear disease and may have to be considered in patients suffering from severe vertigo, nausea, and vomiting of inner ear origin. In some such patients the repeated administration of antiemetic drugs, including new phenothiazine derivatives, is justified even when there is the risk of causing extrapyramidal side effects.

Conclusions

Ryle observed that "symptoms are a part of morbid physiology; they express disturbances of function. As a rule, therefore, they precede the development of signs which are but the outward morbid anatomy of the living." He chose nausea as one of three symptoms to illustrate his thesis. Since the publication of his *Natural History of Disease*, the opportunities and expectations of symptomatic treatment of nausea and vomiting have greatly increased. There should be a concomitant increase in diagnostic precision if the doctor is to avoid inappropriate application of symptomatic drugs. In addition, it is evident that the sites and modes of action of antiemetic drugs are incompletely understood and that their side effects are often unpleasant and occasionally dangerous.

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Bone and Joint Diseases

Ligamentous injuries around the knee

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Though they are rare in children, injuries to the ligamentous structures of the knee joint are common after adolescence. The most common cause is a sports injury but they are seen after road accidents or any type of fall. When they are severe they may permanently alter the life pattern of young, physically active individuals—particularly their spare-time activities.

The ligaments of the joint are the static stabilisers. They surround the joint. They are strong at the sides and posteriorly, and the cruciate ligaments cross near the central pivot point. Anteriorly the ligaments are weak but this area is largely filled

by one of the dynamic stabilisers, the extensor apparatus. Under stress, ligaments control stability when muscles, the dynamic stabilisers, are relaxed or strained to their limit.

The problems of knee ligament injuries are not appreciated by the sportsman. Commonly he will sigh with relief when a ligament damage is diagnosed in the belief that a semilunar cartilage injury, which he fears, is more serious. It is much easier to get a man back to a full active life by surgical treatment of a torn meniscus than after a serious ligament injury.

Normal knee

The normal knee is stable in full extension. The stability is due to the fit of the femoral and tibial condyles and to the tautness of the medial and lateral ligaments and the posterior capsule. In this position there is no side to side or rotatory movement possible. Body weight is transmitted in front of the centre of the joint. The extensor muscles are relaxed.

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As the joint flexes the dynamic stabilisers take part in controlling stability. The line of weight bearing moves posteriorly, and the joint becomes less stable. For complex leg movements it is essential that some rotation can take place. As the knee flexes the collateral ligaments and posterior capsule are relaxed, and rotation becomes possible. Abnormal stress in any straight direction can cause rupture of one or more of the knee ligaments but a potent cause is an excess of the normal movement of rotation of the flexed joint.

The abnormal mobility produced by damaged knee ligaments singly and in combination was described many years ago from painstaking anatomical dissections. Much of this work has been neglected but recently orthopaedic publications have shown a renewed interest in the subject by further investigations, and these have confirmed the earlier findings. Now there is a greater general interest and understanding of the subject. Some of the time-honoured clinical teachings, handed down from teacher to teacher, have to be abandoned.

Knee injuries

MEDIAL LIGAMENT

Factually the medial ligament consists of the medial and posteromedial capsule with particular strength in the medial portion. It is a static controller of external rotation of the tibia, and by controlling this rotatory movement it controls valgus strains. It is the ligament the footballer and the skier strains when a foot is planted and the body rotates to the opposite side. When damaged a rotatory instability results, described as anteromedial instability because the medial tibial condyle can rotate anteriorly to an abnormal degree. A stress radiograph will show considerable opening of the medial side of the joint with valgus only when abnormal rotation takes place. The abnormal mobility produced by the isolated division of the medial ligament is greater than that produced by the isolated division of any other ligament. It produces an anterior draw sign and is the main component of this sign.

The test of a satisfactory repair of medial ligament rupture is in the control of the external rotatory movement of the tibia. In a late case of medial ligament damage the complaint is of a knee that gives way in external rotation of the tibia, and the differential diagnosis is of a torn medial cartilage. If a medial cartilage is removed when the medial ligament is lax, commonly the rotatory instability is increased because the posterior horn of the cartilage may have been a block to some of the abnormal rotatory movement.

The anterior draw sign has commonly been attributed to a damaged anterior cruciate ligament. This is incorrect. A damaged anterior cruciate ligament in isolation produces little abnormal movement. The main component of this sign is a torn medial ligament. The sign is accentuated, however, if the medial ligament tear is combined with one of the anterior cruciate ligament—which is not uncommon.

It is easy to see how the mistaken idea arose. If a knee joint is explored in which the sign is positive the extensive old tear of the cruciate ligament is easily visible because there is no continuity across the divided ends. But an old damage of the medial ligament heals. It escapes notice that the healing is with gross lengthening. The surgeon cannot correct a true anterior draw sign without repairing the medial structures.

ANTERIOR CRUCIATE LIGAMENT

An isolated tear of the anterior cruciate ligament is difficult to diagnose because it produces so little abnormal movement. It may be produced by acute flexion of the knee joint while the tibia is internally rotated. This may happen when a footballer, or more commonly a basket-ball player or a gymnast, comes

down hard from a height forcibly flexing one knee by body weight—or when a cyclist crashes with a flexed knee under the bicycle. A typical history of injury with an otherwise unexplained haemarthrosis should suggest the possibility of this injury. When the radiograph shows a detached bony fragment from the anterior intercondylar area of the tibia the diagnosis is certain. More commonly the radiograph is normal and the injury is missed.

If abnormal movement is present with this injury it is likely that the posterolateral capsule is damaged as well, and the movement is a forward rotatory one into internal rotation of the tibia. The lateral tibial condyle rotates forwards and medially, the reverse of the medial ligament tear movement. It is an anterolateral rotatory movement.

LATERAL STRUCTURES

The lateral structures of the knee joint consist of the lateral ligament; the lateral and posterolateral capsule; the popliteum and biceps femoris tendons; and the fascia lata, which is the strongest of these structures. These structures are most commonly injured by an acute varus strain detectable by a strain radiograph. There is little rotatory instability. If a strain radiograph shows wide opening then one or both cruciate ligaments also must be damaged, and probably there is most extensive tearing of all the lateral structures.

Many athletic people have a slight genu varum, with their centre of gravity being medially placed. For this reason if damaged lateral structures join with lengthening there is increased outward bowing of the knee with each step taken. This causes the knee to wobble. A similar degree of lateral laxity would cause little trouble in genu valgum.

POSTERIOR CRUCIATE LIGAMENT

The role of the posterior cruciate ligament has been underrated. The abnormal mobility produced by its damage singly or in combination is just as great as that produced by anterior cruciate ligament injuries. The classical sign is the posterior draw sign that must be distinguished carefully from an anterior by observing both knees from a lateral position. The most common cause of this injury in Britain is a blow on the front of a flexed knee, common in motorcyclists and may occur in dashboard injuries. When there are signs of contusion to the front of knee and upper tibia the joint should be examined for a posterior draw sign particularly. This injury is commonly missed if the ligament has not avulsed a bone fragment from the tibia.

Whereas secondary repair operations can be undertaken for late instability associated with anterior cruciate ligament damage, no such procedures are available for the posterior cruciate ligament. Thus early detection and repair are most important.

Treatment

The best chance of correcting any ligament instability is within seven days of injury. For this we need an early accurate diagnosis from history and physical signs.

In acute cases pain may be very variable. A patient can walk into a consulting room with a complete tear of the medial ligament. Pain and consequent protective muscle tension may make examination difficult, and diazepam (Valium) or general anaesthesia may be needed to complete a thorough examination. The appearances on a plain radiograph can be extremely misleading. Stress pictures may demonstrate abnormal joint opening but do not measure the amount of rotatory movement and are not as helpful in the final diagnosis as one might think. The examination for abnormal rotatory movement is just as important as the examination for abnormal movement in one plane.

The extent of swelling is variable. If the joint is distended with blood there can be no complete capsular tear. Conversely, with a complete rupture there may be little joint fluid because it has escaped. Visible bruising is uncommon with simple meniscal tears and indicate capsular damage.

MINOR LIGAMENT SPRAINS

Minor ligament sprains can be treated conservatively but the position of immobilisation is important. The medial and lateral ligaments are taut in extension and relaxed in flexion: therefore the correct position for immobilisation is in about 30° of flexion. Ligaments will heal if immobilised in extension but with inevitable lengthening and hence some degree of instability.

Sometimes people are concerned because of the length of time for recovery of full knee movement after ligament injuries treated surgically or conservatively. It is best that recovery is slow, for rapid recovery means repair with lengthening. We forget that a ligament glides over bony surfaces near their attachment, and this cannot take place until full healing.

INSTABILITY

Late cases of instability are common. In some of these the

injuries have been missed. In others primary repair has achieved only limited stability. Not all of these need surgical treatment, and building up the thigh muscles with physiotherapy may suffice. Considerable interest and ingenuity have been used in attempts at surgical correction of this problem. Repair procedures are undertaken according to the type of instability rather than for a named ligament rupture. It may be stated with some confidence that late anteromedial and anterolateral instability are correctable, but late cases of posterior cruciate and pure lateral ligament instability cannot be repaired with confidence.

Before any consideration of late ligament repair possible meniscal damage must be investigated and treated. The commonest cause of knee instability is a torn cartilage, and once this is removed sometimes the dynamic stabilisers control a knee sufficiently for the patient's needs.

A joint that is unstable for a long time will develop degenerative changes. Recurring abnormal movement and abnormal pressure from deformity cause articular cartilage damage. Ligamentous knee joint injuries are serious, and the more severe injuries cannot be repaired to give more than a good result. Many of them can be described only as fair. Inevitably this raises the question of the relative merits of conservative treatment for all cases and surgical treatment for all complete ruptures. The balance strongly favours surgery improving a result when complete rupture has been diagnosed correctly and the surgical repair has been thorough.

Medicine in Society

Self-help society for eczema sufferers and their families

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It is easy to see why self-help societies for the chronically ill and their relatives have grown up in Britain. One guide¹ lists over 50—for diabetes, spina bifida, Friedreich's ataxia, migraine, and almost any disease you can name. As acute illness has been treated more successfully and the complications of chronic illness reduced, patients have taken more notice of the problems that arise from their trying to lead normal lives. Fellow sufferers may often understand these problems better than a doctor. At the same time articulate patients and the parents of sick children have become less passive, more concerned to understand their illnesses, to participate in treatment. Mass communication has given them opportunities to contact others. How, then, are these self-help societies formed and how do they work? The history of the eczema society may not be typical, but it sheds light on many aspects of the relation between self-help societies and health professionals.

The National Eczema Society

Eczema affects about 4% of the population and accounts for most of the 10 million prescriptions written in England each

year for topical steroids. It attacks mostly (and most severely) very young children. Typically, a young mother has to organise special clothing, feeding, playing, house-cleaning, and bathing, as well as the treatment the doctor may order.

Christine Orton, whose 8-year-old son had suffered from eczema since infancy, wrote about him in the *Guardian* in May 1975. (A newspaper's help is important for a self-help group, and credit should go to one that gives it; some popular dailies later refused to write about eczema.) In passing, Mrs Orton wrote, "Perhaps we should form a society for sufferers and their relatives." This sentence provoked hundreds of letters from patients, parents, nurses, doctors, and a dermatologist who ran regular family therapy groups. Drug manufacturers wrote to her about steroids. The National Council of Social Services (NCSS), a government-financed organisation experienced in getting charities and self-help groups off the ground, sent an offer of advice and facilities. So in July last year a group of 55 people met at the NCSS in London. They formed local groups to plan recruitment, appointed a steering committee to organise the National Eczema Society, and donated £70 towards it.

ISOLATION AND EMBARRASSMENT

It was a relief to see how few the cranks and inveterate doctor-bashers were. A few stood up at the first meeting to extol vitamin X or litigation against dermatologists, but most wanted to co-operate with doctors and drug companies. What became

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