DR. NUKI (*Glasgow*) I would challenge the statement that the synovium is probably normal after synovectomy in view of the data from xenon clearance studies.

MR. TAYLOR I agree, I am probably drawing assumptions. All I can say is that, in some cases, the arthrogram after synovectomy may revert to a more normal appearance.

DR. NUKI (*Glasgow*) How long after operation was the arthrography carried out?

MR. TAYLOR At varying intervals between one month and a year.

DR. GARDNER (*London*) You have raised one very interesting point. How did you differentiate between synovial thickening and fibrin deposition?

MR. TAYLOR Only that there is a good correlation between operative findings and arthrography. Synovial proliferation is seen as a smooth definite outline, the fibrine as a 'woolly' appearance.

DR. HILL (*Stoke Mandeville*) Was the fibrin present as loose bodies?

MR. TAYLOR The fibrin loose bodies are on the whole free in the joint cavity.

Closed-circuit Television in the Teaching of Rheumatology. By D. J. G. HOLROYDE, D. I. HASLOCK, and V. WRIGHT (*Leeds*)

The use of closed-circuit television, and indeed of other audio-visual techniques, is becoming increasingly recognized as an invaluable part of medical teaching at all levels. The increasing number of students, the changing curriculum, and the sheer visual nature of much of the evidence encourages the use of new media, especially in those cases where teaching staff have much repetitive information to impart and where so much case study work is involved. The use of these new resources for medical teaching is becoming an integral responsibility of the new central services in universities which have been set up in the last few years and which are designed to contribute, in terms of both quality and quantity, to the teaching of all subjects in the field of higher education. In medicine, the benefits to be obtained, in particular from television, seem to apply equally to preclinical, clinical and postgraduate education, and new facilities are becoming available whereby the distribution of videotaped learning material can be made more easily available at times and in places which suit the needs of learners who already have a very full schedule. The observation and use of patients as part of a series of structured television presentations, which can be pre-recorded at times convenient to the teachers and consultants involved, facilitates the building up of a library of case studies to which teachers and students alike can have easy access. The eye of the camera can often show up much more clearly the symptoms and diagnostic techniques in ways that research has shown to leave a clear impression with the learners. It also reduces repetitive teaching on patients with interesting signs.

Rheumatology is one of the clear areas where these new resources can be used to advantage.

Discussion

DR. TALAL (*Bethesda*) We are all well aware of McLuhan's ideas that television diminishes the participation of the observer and shortens the period of retention of such material. Have you compared the effectiveness of programmes presented on a television screen with live presentations?

DR. HOLROYDE There have been no tests of controlled groups in this particular case, but all the research that has been done shows that the results are better than if the material is presented live. The tape can be seen again and again, and the student can always see it again on demand.

DR. PALFREY (*London*) Can I ask whether you think colour television is necessary in the presentation of histological material, and if so whether you think the extra cost is justified?

DR. HOLROYDE Yes, I think that probably in the long run it is necessary, and then eventually the cost will not be so great and will be justified. The problem is not whether better results are going to be produced by better or more sophisticated equipment, but whether interested physicians will make the programmes. I think that given 5 more years' experience in colour in this country, it will become within the range of most medical teaching schools.

DR. BREWERTON (*London*) You pointed out that the great difficulty is time for preparation. How long did it take to prepare that film, and how long would it take to prepare a film or live discussion?

DR. HOLROYDE It did not take long to prepare once we had planned it. We did one or two recordings beforehand. Dr. Haslock was well aware of what he had to do. Given a little more assurance and experience I believe such a programme could be put together very quickly. Again we could justify this in terms of replay. Again, if you are manufacturing material for group showing, you are dependent on having the right type of patient available at the appropriate time.

DR. GLICK (*London*) What about using television in out-patient departments? How acceptable to out-patients would your apparatus be? Would patients be prepared to sit in front of one of these screens while being interviewed?

DR. HOLROYDE The patients seem to have less objection to appearing in front of a television screen than to being dragged in front of a lot of students.

DR. GLYN (*London*) I see that this is a film. What is the relative cost of film and video tape?

DR. HOLROYDE What we have just shown is on video tape, and it may be used again and again. It can be re-done with no extra cost, which is not possible with film; for example, the position of the hand with the over-head camera was not quite right. This could have been achieved better with a little practice, and the sequence repeated.

PROF. BYWATERS (*Taplow*) The life of this type of presentation is becoming shorter with rapidly advancing knowledge and changing concepts. This is one of the great drawbacks of all these types of pre-recorded teaching. I do not quite see how that can ever be got over.

DR. HOLROYDE The question is a philosophical one. It relates to whether the quality of a lecture such as this is haphazard. The lecturer may be extremely good one week and bad the next week. How much better to have a presentation when the lecturer is on top form, and for this to be available at the end or beginning of term.

Metatarsalgia caused by Derangement of the Second, Third, and Fourth Metatarsal Joints. By J. M. FITTON (*Leeds*)

The syndrome known as metatarsalgia is common, and only in a small proportion of cases is there a recognizable disease entity to explain the complaint of pain. In the majority of cases pain is attributed to reversal of the metatarsal arch, to prominence of a metatarsal head in the sole, or to the indirect effects of a severe hammer toe.

Three types of pathological lesion have been found to occur in the flexor tendon sheaths and in the accessory plantar ligaments of most patients:

- (a) Rupture of the flexor tendon sheaths under the metatarsophalangeal joints;
- (b) Degeneration and rupture of the accessory plantar ligaments;
- (c) Derangement of the 'Sleeve' of the metatarsophalangeal joint.

Rat Adjuvant Arthritis: Modification by Intraperitoneal Injections of Dead Tubercle Bacilli or Tuberculin. By H. L. F. CURREY (*The London Hospital*) To be published in full with the Discussion in a future issue of the *Annals*.

Test of Diagnostic Criteria – Experience in England and Wales. By T. M. CHALMERS, J. DANCHOT, J. H. KELLGREN, D. KING, E. PIKHLAK, K. SIEVERS, ELIZABETH STREVEVS, B. TAIT, and P. H. N. WOOD (*Manchester*)

The information required for the various criteria for rheumatoid arthritis, ankylosing spondylitis, and gout was recorded for 200 consecutive new patients and 213 additional cases of established disease attending the Manchester Royal Infirmary. Patients were classified by the final clinical diagnosis, and the performance of the different sets of criteria was studied in each group of patients.

(a) *Gout* – 39 cases

Rome and New York criteria:

sensitivity 92 per cent.; specificity 99.8 per cent.

(b) *Ankylosing spondylitis* – 62 cases

Clinical criteria used on their own had a sensitivity of only 34 per cent. Iritis and chest expansion of little value.

Sacroiliitis and one clinical feature:

sensitivity 74 per cent.; specificity 99 per cent.

Relative value of sacroiliac radiographs so high that obtaining these x rays must be regarded as a *sine qua non* of any survey for spondylitis.

(c) *Rheumatoid arthritis* – 127 cases

Performance of criteria:

– Active polyarthritis (ARA clinical), probable+definite: sensitivity 90 per cent.; specificity 77 per cent.;

– Inactive RA (Rome), probable+definite:

sensitivity 91 per cent.; specificity 90 per cent.;

– RA (New York), 2+ criteria:

sensitivity 93 per cent.; specificity 82 per cent.

Although many of these sets of criteria seem to be working quite well, certain individual features are of questionable value. Moreover, this test takes no account of one important aspect – recognition of mild or early cases.

Discussion

DR. WRIGHT (*Leeds*) This is a very interesting and important approach. I wonder, however, whether one is starting a little too far along the line, since we do not know the clear definition of each criterion. You will remember that Dr. Macrae from our Group presented to the Society in November a method of measuring back movement, and showed clearly that unless one took age and sex into account then you would miss some cases of significant limitation of back movement, and conversely assume the measurements were significant when they were not. More recently, Dr. John Moll in our Unit has been looking at various methods of measuring chest expansion, and he has shown a very similar age relation. I would really like to ask, therefore, in your spondylitic study what method was used for measurement of limitation of back movement, what method was used for defining limitation of chest expansion, and was age taken into account?

DR. WOOD We tried to produce definitions of methods and of other problems encountered in the survey, and this filled eight pages. Even so there were many points we did not cover. Age has not been taken into account in these analyses. Some years ago we looked at chest expansion in Dr. Lawrence's Watford data, where there was much limitation of expansion. Even if we looked only at younger men in the spondylitic age group, chest expansion was unsatisfactory as a means of differentiating between spondylitics and non-spondylitics.

PROF. KELLGREN (*Manchester*) The sacroiliac x ray is obviously vastly important. It must be remembered that this is in-operative in people under 15 years of age which present a difficult problem. We shall undoubtedly have to work out different criteria for spondylitis under the age of 15.

DR. HILL (*Stoke Mandeville*) I wonder to what extent a follow-up will come into the picture? The problem is that you could never by prolonged follow-up prove that a patient did not have rheumatoid arthritis, but if the diagnosis was in doubt originally you might be able to