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CONCISE COMMUNICATIONS

Isolation of varicella zoster virus from the synovial fluid of a patient with herpes zoster arthritis

Only a few cases of herpes zoster–associated arthritis have been reported to date (1–3). This form of arthritis is presumed to be viral in origin. Isolation of varicella zoster virus (VZV) by culture from synovial fluid has not been previously documented. VZV infection of the joint space associated with acute arthritis has been evidenced only once, by the finding of VZV antigen in the joint fluid (1). However, VZV has been isolated from the joint fluid of several children with chickenpox-associated arthritis (4,5). We report herein the first case of documented isolation of VZV from synovial fluid in an adult with zoster-associated arthritis.

A 67-year-old man presented with a warm, swollen, painful right knee associated with an erythematous rash with grouped vesicles over the L5 dermatome. Symptoms had begun 3 days earlier without fever. Aspiration of synovial fluid 4 days after the onset of arthritis symptoms yielded 40 ml of straw-colored fluid. The synovial fluid leukocyte count was 17,600/mm^3, with 44% lymphocytes and 56% polymorphonuclear cells. Findings on blood and synovial bacteriologic cultures were negative. The blood leukocyte count was 4,400/mm^3, and the erythrocyte sedimentation rate was 5 mm/hour.

The aspirated joint fluid was immediately inoculated onto a culture plate of human fibroblast cells. A typical cytopathic effect was demonstrated 10 days after the inoculation. The tentative identification of VZV was confirmed by immunofluorescence staining using a specific monoclonal antibody (clone 2013; Biosoft, Paris, France). The serum VZV antibody titer as determined by enzyme-linked immunosorbent assay (Behring, Marburg, Germany) was >1:5,120. The symptoms resolved spontaneously within 72 hours, without sequelae.

Arthritis caused by direct viral infection in the joint space is seldom documented. Rubella virus (6), vaccinia virus (7), herpes simplex virus (8), cytomegalovirus (8), echovirus (9), and VZV in association with chickenpox (4,5) have been cultured from the synovial fluid of patients with acute arthritis. Isolation of VZV from the joint fluid of our patient with herpes zoster eruption, in the absence of a bacterial pathogen, is strong presumptive evidence that the virus caused the arthritis. In previously reported cases of herpes zoster–associated arthritis (1–3), the arthritis involved one large joint (knee, hip). In 2 cases (2,3) it began 2 or 3 days before the onset of the typical vesicular rash, and the skin rash and joint pain resolved completely without treatment within 8–10 days. The leukocyte counts in aspirated joint fluid were low, ranging from 2,000 to 9,000/mm^3 (1). To our knowledge, findings on viral cultures were always negative.

Our ability to isolate VZV from the joint fluid in this case, confirming the diagnosis, was probably due to early sampling and immediate inoculation of the fluid into culture cells. However, we again isolated the virus when the joint fluid, which had been frozen and stored at −80°C for 5 days, was reexamined. In view of the lack of reports of isolation of VZV from synovial fluid, efforts were made to confirm the identity of the cytopathic agent. It was indeed identified as VZV, not only by the characteristic cytopathic effect, but by positive immunofluorescence staining using a monoclonal antibody.

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Arthroscopy in rheumatology training programs associated with NIH multipurpose arthritis centers: results from a survey of program directors

Technological advances in the design of arthroscopes that have led to the production of much smaller units, applicable for use in an office setting with the patient under local anesthesia, have led to a rebirth of interest among rheumatologists in this procedure as a research and diagnostic tool. In a recent survey of American College of Rheumatology (ACR) members, one-third expressed an interest in taking an introductory course in arthroscopy and 194, or 13% of the respondents, indicated an intent to start performing arthroscopy within the next year (1). At this institution, one rheumatologist (RWI) has performed arthroscopy in an operating room setting since 1987 and has been exploring the role of outpatient "needle" arthroscopy for the last 2 years.

Several other rheumatology programs at academic medical centers have begun to explore possible applications of arthroscopy in clinical rheumatology, but the extent of nascent interest in the procedure is not widely appreciated.

In order to obtain information regarding the current and expected future status of arthroscopy in rheumatology training (to be included in a presentation on this topic to the arthroscopy study group session at the 1992 ACR annual meeting), in October 1992 we asked the 14 directors of rheumatology training programs at institutions with active National Institutes of Health (NIH)–funded Multipurpose Arthritis and Musculoskeletal Disease Centers (MACs) to complete a 9-item questionnaire focusing on the current status of arthroscopy in the program and on views held by the program director regarding the future of arthroscopy in rheumatology. We chose to survey MAC programs because of their shared structure and programmatic objectives. The responses indicate both interest and skepticism, reflecting a climate in which rigorous assessment of the technique should occur before it is widely incorporated into the practice of rheumatology.

All but 1 of the program directors (13 of 14; 93%) completed and returned the questionnaire. The director who did not respond is affiliated with a program that is not active in arthroscopy and does not have immediate plans to enter the field. At least 1 member of the rheumatology faculty was currently performing arthroscopy at 6 of the 13 programs. All 6 were performing the procedure in an office setting, but operating room–based conventional arthroscopy was performed in only 1 program. Among the 6 active programs, arthroscopy was being used for research purposes in all 6, for diagnostic purposes in 4, and with therapeutic intent in 3. Of the 7 programs not currently active in arthroscopy, 2 directors indicated that a faculty member was currently receiving training to perform arthroscopy, 3 indicated that such activity would begin within 6–12 months, and 2 indicated that a member of the rheumatology faculty would become involved in 1–5 years. Asked to anticipate the role of arthroscopy in their programs 5 years from now, 12 of the 13 directors saw a role in research, 10 foresaw a role in diagnosis, and 7 anticipated a role in therapy. One director of a program currently active in arthroscopy thought that in 5 years the procedure would no longer have a role. Asked to predict how the general rheumatology community would view the role of arthroscopy as a tool of the rheumatologist 5 years from now, 11 of 13 respondents considered a diagnostic role, 10 a role in research, and 6 a role in therapy. One program director (at a center not involved in arthroscopy) expected that the general rheumatology community would see no role for arthroscopy as a tool of the rheumatologist.

To gauge the role of arthroscopy in fellowship training, each director was asked if fellows in their program currently had the opportunity to participate in arthroscopic procedures. Of the 6 programs active in arthroscopy, 4 offered opportunities to participate in arthroscopy with the staff rheumatologist, 2 provided opportunities to perform arthroscopy with an orthopedist, and 2 did not offer an exposure to arthroscopy as part of the fellowship experience. Of the 7 programs without a faculty arthroscopist, 3 indicated that there was an opportunity to participate in arthroscopy with an orthopedist while 4 programs did not offer this exposure. Among the 7 programs that provided at least some opportunity for exposure to arthroscopy, fellows had taken advantage of the opportunity in 5 of the programs. Of the 13 program directors asked to predict the place of arthroscopy in rheumatology training programs 5 years from now, 2 considered that it would be an essential part of all training programs, 10 thought that the procedure would be offered by some training programs including their own, and 1 stated that arthroscopy would by then not be a part of rheumatology fellowship training.

Finally, the directors were asked to choose, from a list of 5 possibilities, the issue that they saw as the most significant barrier to the performance of arthroscopy by rheumatologists. The distribution of responses was as follows: lack of indications for use of arthroscopy in rheumatologic situations, 6; no data from prospective clinical trials supporting arthroscopic intervention in any rheumatologic situations, 4; opposition by orthopedic surgeons, 3; financial issues (equipment costs, reimbursement), 2; lack of training resources for those interested in learning the procedure, 2; and malpractice issues, 1. Three respondents made more than 1 choice.

While the 14 medical centers with active NIH MACs represent only 11% of the 122 accredited training programs in rheumatology, each is expected to fill a leadership role in rheumatology research, education, and training (2). Our survey indicates that, as of October 1992, most MACs see arthroscopy as a potentially important part of their activity. There is a diversity of opinion regarding the role that arthroscopy will serve in the MACs and in general rheumatology practice. Although there is near-unanimity that arthroscopy will prove valuable as a research tool, there is less agreement regarding its clinical role. This uncertainty may partly explain why exposure to arthroscopy is not yet integrated into fellowship training at MAC institutions, even at some of those that are currently active in arthroscopy. That this situation will change seems likely, since almost all program directors see arthroscopy as an important feature of at least some training programs in the future.

While some MAC program directors perceive economic and political issues as the major barriers to further use of arthroscopy by the rheumatologist, the majority believe the procedure must await better definition of clinical indications for its use, both in a general sense and as defined by prospective trials. Careful definition of the indications and potential benefits of arthroscopy in rheumatologic situations—stated by Meenan as one of the 6 key issues to be faced by the ACR over the next 5 years (3)—can best occur through application of the procedure in a setting where rigorous ongoing analysis of these factors can take place. The environment of a MAC is ideally suited for this activity, and the research benefits of the procedure can also be made available to the basic science investigators affiliated with each center. Thus, the current level of interest and activity in arthroscopy at the MACs bodes well for the future development of arthroscopy as a tool for research, diagnosis, and therapy in rheumatology.

Opinions from the research centers surveyed may not concur with those from the community of practicing rheumatologists, making it inappropriate to extrapolate our specific conclusions beyond the group surveyed. Nevertheless, implications of these survey data do extend beyond the MACs. We are aware of several other major academic rheumatology programs not affiliated with MACs that also have ongoing arthroscopy programs in which the utility of this technique is being actively explored. The ACR demonstrated its support of arthroscopy in 1992 by sponsoring 3 introductory courses for rheumatologists interested in the procedure (4). Further, Malawista has indicated that the ACR should first actively seek to determine the role that arthroscopy may fill as a clinical tool, then support the uses of arthroscopy that can be shown, with scientific rigor, to be appropriate (5). Thus, the approach being taken toward arthroscopy in rheumatology by the discipline's leading academic centers (MACs and others) and primary professional organization (the ACR) defines a path by which legitimate uses of arthroscopy will be well established before the procedure is recommended as an important tool for rheumatologic practice.

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