Multiple myeloma does not show a similar geographical variation, although incidence data relating to myeloma must be evaluated with care in view of diagnostic uncertainties.[4] The risk of developing myeloma is slightly increased in individuals infected with HIV-1 and the increase is not as marked as that seen with Kaposi's sarcoma or non-Hodgkin lymphomas and has not been observed in several studies.[5]

To further evaluate the association between HHV-8 and myeloma, we investigated whether the prevalence of HHV-8 is greater in myeloma patients than in healthy controls. Serum samples from 78 cases and 37 healthy controls from the UK were assayed for antibodies to HHV-8 lytic and latent antigens with an ELISA detecting reactivity to the orf 65·2 protein and immunofluorescence on the BCP-1 cell line, respectively.[2] Confirmatory Western blotting, with the orf 65·2 protein, was done on all samples that were positive or borderline in either assay. All assays were done as described previously.[2] HHV-8 antibodies were detected in about 80% and 90% of cases of AIDS-associated and classic Kaposi's sarcoma, respectively. Samples from two patients with myeloma and two healthy controls were scored as positive. There was, therefore, no significant difference in HHV-8 seroprevalence between cases and controls.

In view of the low HHV-8 seroprevalence in myeloma, we examined whether myeloma serum could have an inhibitory effect in the ELISA assay. An HHV-8 antibody-positive sample was added to dilutions of the two myeloma samples with the highest concentrations of paraprotein; no inhibitory effects were observed. Because immunosuppression is a known feature of multiple myeloma, we then addressed the possibility that myeloma patients might have diminished or undetectable antibody responses to persistent viral infections. All samples were assayed for antibodies to the EBNA1 protein of Epstein-Barr virus with Western blotting. Serum samples from 73 of 78 cases of myeloma and 35 of 37 healthy controls reacted with the EBNA1 protein at a 1:10 dilution; there was no evidence for reduced antibody responses in the group of patients.

We found no evidence for an association between HHV-8 and multiple myeloma. HHV-8 seroprevalence was similar in patients with myeloma and healthy controls and the results were consistent with previous estimates of HHV-8 seroprevalence in the UK. It is difficult to reconcile these findings with those of Rettig and colleagues because persistent herpesvirus infections are normally accompanied by a continued antibody response.

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Migraine and cerebral blood flow during centrifugation

Colleen Schmidt

I studied the incidence of migraine among freestyle figure skaters (with rotational spinning motion) and ice dancers (same conditions and venue, but without spinning). My hypothesis was that freestylists would experience centrifugation of blood away from the central axis of a spin, whereas ice dancers, even with similar exertion, would experience no such centrifugation. The common freestylists' experience of having fluid forced from the nose during a fast spin indicates that simple fluid dynamics govern the distribution of bodily fluids; more liquid than solid body parts are displaced from the central axis while spinning. If, as predicted by the primary vascular hypothesis of migraine,[1] blood drains from the central cerebral vasculature and pools in the outer vessels, then the migraine experience resembles a skater's spin, at least with regard to blood flow. The primary vascular hypothesis of migraine first proposed by Wolff[1] in 1963 has been bolstered by research such as Sakai's[2] measurement of regional cerebral blood flow with single photon-emission computed tomography, which showed that regional ischaemia exists during migraine aura and is attributable to cerebral vasospasm rather than primary neuronal factors. Panconesi and colleagues[3] showed that migraineurs may be differentiated from non-migraineurs by the pain they feel during hyperaemia, even in other parts of the body.

We found that 11 (22%) freestylists compared with one (4%) ice dancer reported migraines. A change in migraines while skating was felt by ten (91%) of the freestylist-migraineurs, most of whom mentioned that spinning affected their migraines. However, only one (10%) of those with non-migraine headaches found that skating had an effect on their headaches.

This difference is partially due to the fact that strenuous exercise tends to either exacerbate (as reported by Davidoff[4]) or alleviate (as reported by Darling[5]) a migraine. However, such findings do not explain why so many respondents mentioned spinning in particular as affecting their migraines. Also, although both Darling and Davidoff agree that regular long-term exercise tends to prevent migraine, seven (64%) of our surveyed freestylist-migraineurs began to have migraines after taking up the sport of freestyle skating (one of whom had the first migraine while actually on the ice). Because a slight majority, six (55%), of freestylist-migraineurs felt worse from spinning than the four (36%) whose migraines improved, it is not clear and cannot be concluded decisively from this study alone whether freestyle skating exacerbates or alleviates migraine. However, the data support a difference between migraines and other headaches, which is consistent with blood redistribution toward extracranial arteries in the former and lack of this effect in the latter.

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