

The incidence of sinusitis in patients with multiple sclerosis*

R.L. Jones¹, P. Crowe¹, S.V. Chavda¹, A.L. Pahor²

¹ Department of Radiology, City Hospital, Birmingham, United Kingdom

² Department of Otorhinolaryngology, City Hospital, Birmingham, United Kingdom

SUMMARY

A retrospective study was performed to assess the incidence of sinus disease in patients with MS. The MRI scans of 108 patients referred to a regional Neurosciences Unit with a diagnosis of multiple sclerosis were examined. There were 71 females and 37 males with an age range of 22 to 67 years (mean: 39.7 years). The sagittal and axial images were reviewed and the degree of sinus disease noted. This was graded as absent, minimal, polypoid and pansinus. Fifty-seven patients (53%) had disease, the most common sinus involved was the maxillary followed by the ethmoid, frontal and sphenoid. Thirty-six patients had bilateral disease affecting the ethmoid sinuses most commonly. Three patients had fluid levels and four patients had retention cysts. The incidence of sinus disease is higher than in some other studies of normal populations.

Keywords: sinusitis, multiple sclerosis

INTRODUCTION

Multiple sclerosis (MS) is a chronic disease characterised by recurrent episodes of demyelination with a relapsing/remitting course. One theory of the pathogenesis is that there is an abnormal immune response to myelin, possibly induced by a virus. MS increases in prevalence away from the equator and migration studies have shown that a person moving to an area suffers the endemic risk level. An earlier study (Gay et al., 1986) using clinical symptoms to assess the presence of sinus disease showed that MS patients had a higher incidence (69.5%) than either matched controls (17.4%) or cohabitants of the MS patients (16.3%). We present the incidence of sinus disease as assessed by MRI of 108 patients with multiple sclerosis.

METHOD

A retrospective analysis of the MRI scans of patients referred to a regional Neurosciences Unit with a diagnosis of multiple sclerosis was undertaken. The axial and sagittal T₂-weighted images were reviewed. The extent and the distribution of sinus disease was recorded as absent, minimal, polypoid and pansinus. The presence of fluid levels and retention cysts was also noted ("0": absent; "1": minimal; "2": polypoid; "3": complete opacification).

RESULTS

Of the 108 patients 71 were female and 37 male (ratio 1.9:1). The age range was 22 to 67 years (mean age: 39.7 years). Fifty-seven patients (53%) had sinus disease, most commonly affecting the maxillary followed by the ethmoid, frontal and sphenoid. Bilateral disease was seen in 36 cases affecting the ethmoid, then the maxillary and then the frontal sinuses. Minimal mucosal thickening was the commonest finding occurring in 47 cases (Figure 1), polypoid thickening in 23 cases (Figure 2) and pansinus opacification in 6 cases (Figure 3). Involvement of more than one sinus group in the same patient was seen in 32 cases and this tended to be on the same side (Table 1).

Table 1. Distribution of multiple sinus involvement.

grade	maxillary	ethmoid	frontal	sphenoid
1	30	37	14	3
2	18	8	2	2
3	4	1	4	1
bilateral	21	25	5	0

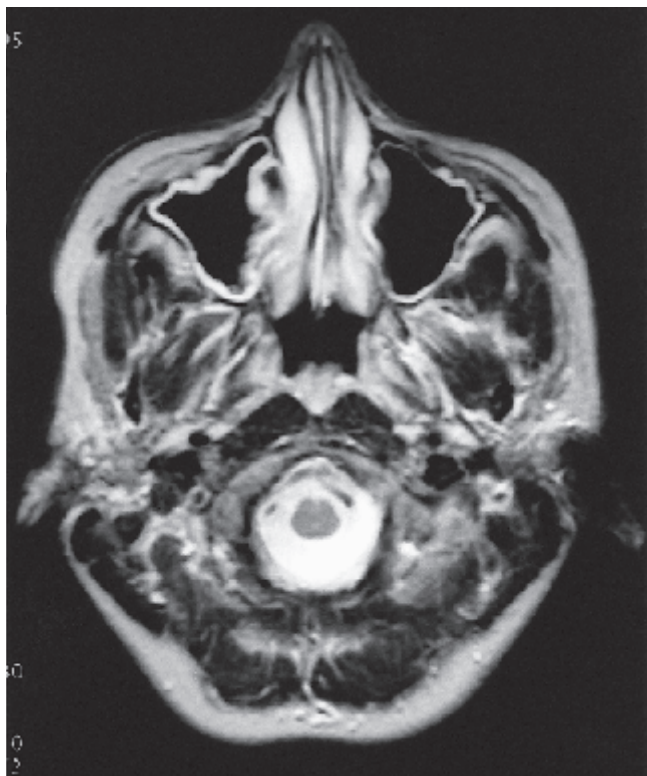


Figure 1. Axial MRI scan demonstrating mucosal thickening.

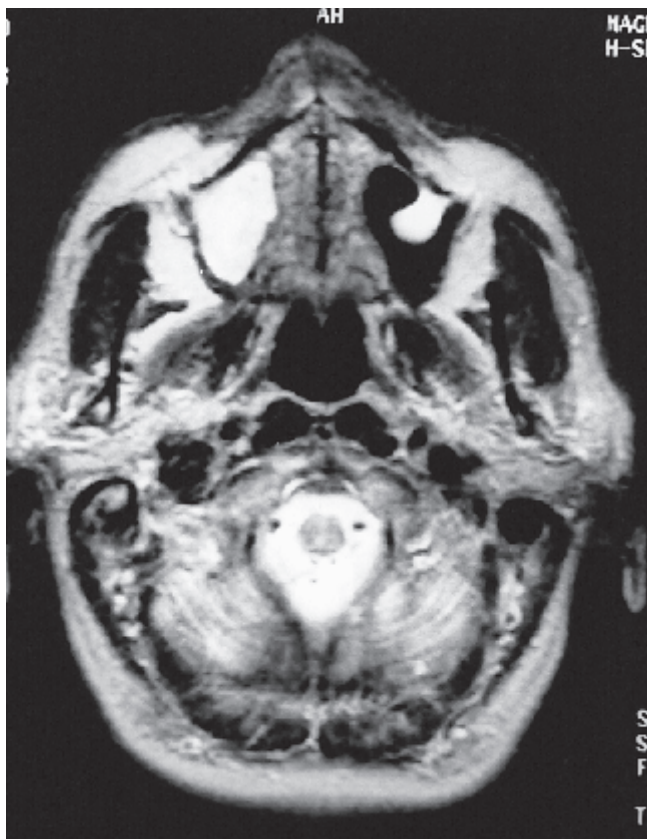


Figure 2. Axial MRI scan demonstrating opacification of the paranasal sinus.

DISCUSSION

MRI is a very sensitive method of detecting soft tissue abnormalities, with inflammatory change seen as high-signal areas on T₂-weighted sequences. There have been a number of studies



Figure 3. Sagittal MRI scan.

into the incidence of paranasal sinus disease in asymptomatic individuals, with figures ranging from 24.7% (Moser et al., 1991), 39% (Lloyd et al., 1990) to 49.5% (Patel et al., 1996). The study of Gay et al. (1986) suggested that MS patients had a higher occurrence rate at 69.5%, while the earlier study of Sibley et al. (1985) reported that clinical viral infections were less common than in a control group. Both these studies on MS patients had however used clinical criteria to establish the diagnosis of sinus disease whereas our study, using MRI, accurately assessed the paranasal abnormalities, but being retrospective it does not allow clinical correlation.

Comparing our results to those of Patel et al. (1996) who studied incidental paranasal abnormalities in a British population we find that apart from an increased incidence of mucosal thickening in multiple sclerosis patients, 85% against 70%, the overall rate of sinus disease and its severity is not significantly different between the two populations. It has been shown that mucosal thickening under 4 mm is not normally of clinical importance, even though these patients may still have symptoms (Rak et al., 1991)

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A.L. Pahor, FRCS
 Department of Otorhinolaryngology
 City Hospital
 Dudley Road
 Birmingham
 United Kingdom