

## Letters to the Editor

PAIN 3160

### The lateralization of back pain is sex-related?

Pain laterality as a part of general problem of asymmetry in animate nature is of obvious theoretical interest. Is there any preference to lesion of any side of a bilateral organism, and if so, what can it be connected with? A few papers on the topic of pain laterality have been published in this journal. Merskey and Watson (1979) reviewed a series of 10 clinical studies on psychotic patients and claimed that pain, when lateralized, occurs more often on the left than on the right. The authors discussed the hypothesis of lower threshold to stimulation on the left. However, some subsequent investigations revealed equal frequency of pain on both sides of the body (Hall et al. 1981; Hall and Clarke 1982; Campbell et al. 1985). As this issue still remains open the purpose of the present study was to analyze the lateralization of pain in a particular site of the body: back pain.

Back pain laterality was examined retrospectively in 1406 patients aged 14–85 years who were admitted to Mogilev Regional Hospital (Belarus) for this diagnosis within a 4-year period. There were 840 men (mean age 44.4 years) and 566 women (mean age 45.6 years) to study. The diagnosis was confirmed by clinical and X-ray examination. In the total sample left-sided back pain occurred in 529 cases, right-sided back pain in 492, and bilateral back pain in 385 cases. The difference in the frequency of left and right-sided back pain was not statistically significant ( $\chi^2 = 2.11$ ,  $df = 1$ ). Among males back pain of distinct lateralization was found, respectively, in the proportion of 352:280:208 prevailing on the left ( $\chi^2 = 13.15$ ;  $P = 0.0003$ ); among females it was met in the proportion of 177:212:177 being more common on the right ( $\chi^2 = 4.80$ ;  $P = 0.0285$ ).

Some evidence indicates that the established fact is not single. So, the sides of men's and women's bodies are affected by renal tuberculosis and nephroptosis in a similar way (Lopatkin and Shabad 1985). Adnexitis and extrauterine pregnancy are more frequent on the right (Makarov 1958). In true hermaphrodites, ovaries are preferentially situated on the left and testes on the right side (van Niekirk and Retief 1981). Since ancient times the Chinese have been associating male substance Yang with the left side of the body, whereas female source Yin with the right (Omura 1982). The old theories of sex determination also considered maleness and femaleness to be related to the opposite body sides (Mittwoch 1985).

In this context the phenomenon of cerebral lateralization should be taken into consideration. It is known that men exhibit a higher ratio of left-handers than women do, probably as the result of prenatal testosterone that slows down the growth of the left hemisphere (Geschwind and Galaburda 1985). Handedness seems to be correlated with the body side which a disease develops on (Rintala 1985; Goldberg and Dowling 1990). Consequently, the peculiarities of cerebral lateralization in men and women can partially explain a relationship between side of back pain and sex.

### References

- Campbell, J.A., Lahuerta, J. and Bowsher, D., Pain lateralization in relation to site of pain and diagnosis, *Pain*, 23 (1985) 61–66.
- Geschwind, N. and Galaburda, A.M., Cerebral lateralization: biological mechanisms, associations, and pathology. A hypothesis and a program for research, Parts I, II, and III, *Arch. Neurol.*, 42 (1985) 428–459, 521–552, 634–654.
- Goldberg, C. and Dowling, F.E., Handedness and scoliosis convexity: a reappraisal, *Spine*, 15 (1990) 61–64.
- Hall, W. and Clarke, I.M.C., Pain and laterality in a British pain clinic sample, *Pain*, 14 (1982) 63–66.
- Hall, W., Hayward, L. and Chapman, C.R., On 'the lateralization of pain', *Pain*, 10 (1981) 337–351.
- Makarov, R.R., *Extrauterine Pregnancy*, Medgiz, Moscow, 1958 (in Russian).
- Merskey, H. and Watson, G.D., The lateralization of pain, *Pain*, 7 (1979) 271–280.
- Mittwoch, U., Erroneous theories of sex determination, *J. Med. Genet.*, 22 (1985) 164–170.
- Lopatkin, N.A. and Shabad, A.L., *Urologic Disease in Women*, Meditsina, Moscow, 1985 (in Russian).
- Omura, Y., *Acupuncture Medicine: its Historical and Clinical Background*, Japan Publications, Tokyo, 1982.
- Rintala, A.E., Relationship between side of the cleft and handedness of the patient, *Cleft Palate J.*, 22 (1985) 34–37.
- van Niekirk, W.A. and Retief, A.E., The gonads in true hermaphrodites, *Hum. Genet.*, 58 (1981) 117–122.

Sergei V. Verenich

*Department of Defectology,  
Belarussian State Pedagogical University,  
Minsk 220809 (Belarus)*