RE: Non-traumatic cerebrospinal fluid rhinorrhea: diagnosis and management

To the Editor: I would like to congratulate the original paper titled "Non-traumatic cerebrospinal fluid rhinorrhea: diagnosis and management"[1] because we consider it a serious and well written one. Al Sebeih et al describe the diagnosis, modified methods of localisation, and surgical repair of a series of nine patients presenting with non-traumatic cerebrospinal fluid (CSF) rhinorrhea. The laboratory examination of CSF continues to play an important role in the clinical diagnosis and treatment of various disorders of the central nervous system. To help the diagnosis of CSF rhinorrhea and to follow-up the efficacy of the surgical repair surgery, they quantified beta-2 transferrin content in nasal fluid by electrophoresis. Beta-2 transferrin isoform is a typical protein from CSF. Asialo- or beta-2 transferrin occurs in the CSF and a few other body fluids, e g, perilymph and aqueous humor. But there is another protein from the CSF for diagnosis of CSF rhinorrhea: beta-trace protein. The diagnostic relevance of beta-trace protein comes from its use as a marker to detect CSF in the nasal secretion from patients with rhinoliquorrhea.[2,3] Beta-trace protein in CSF originates exclusively from the brain. The main source of biosynthesis in the brain for this protein is the leptomeninges.[4,5]

The most outstanding aspect of beta-trace protein is the sensitivity of the method usually employed in diagnosis. It is much better than electrophoresis and requires less professional expertise to perform the technique. Potential pitfalls in interpreting electrophoresis and Western blots occur when other transferrin isoforms approximate the migratory behaviour of beta-2 transferrin.[6] Beta-trace protein may be quantified by nephelometric and immunoenzymatic assay.

Others have pointed out the interference of major sialo-total transferrin with the asialo transferrin or beta-2 transferrin band detection in the sample[7] and other suggest a combination of beta-2 transferrin with high resolution image techniques.[8] However, the possibility of bias should be careful considered, an in particular, negative results should be critically compared with the clinical symptoms and with results from other diagnostic procedures. Beta-2 transferrin determination in the nasal discharge has a reported sensitivity of 79%.[9] For these reasons we strongly recommend the use of beta-trace protein to discriminate CSF content in nasal fluid.

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