

Tic douloureux and diabetes mellitus

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THE facts that tic douloureux is an extremely painful disorder and that diabetes mellitus is frequently associated with pain at varied sites, led us to explore a possible association between the two disease entities. Accordingly, 30 patients with tic douloureux, whose status in regard to possible diabetes mellitus was not known, were selected for the study.

PATIENTS

All 30 patients had typical idiopathic tic douloureux with pathognomonic pain. In no patient were there significant abnormal neurologic signs.

All of the patients were tested for glucose tolerance. The glucose tolerance tests consisted of blood sugar determinations both one hour and two hours after a 100-g glucose meal. The upper limits for the one-hour and two-hour blood sugar values were 160 mg and 105 mg per 100 ml, respectively. Of the 30 patients, 10 had abnormal values in the diabetic range. The case data are summarized in *Table 1*.

COMMENT

Many pathologic conditions have been associated with tic douloureux. These include multiple sclerosis, brain tumors, and vascular anomalies. Likewise, many abnormal conditions have been associated with diabetes mellitus.

However, published reports have not mentioned that diabetes mellitus was associated with tic douloureux.¹ Though the number of patients in our series is small, the proportionately large number of patients with abnormal results of glucose tolerance tests, in the diabetic range, we believe is significant.

Possible sources of error were explored before we drew conclusions. For example, a period of starvation can produce abnormally high blood sugar values.² It is certainly well known that patients suffering from tic douloureux will avoid eating during painful paroxysms, or may not eat in order to avoid pain. Also, pain, or anticipation of it, may cause an increase in circulating epinephrine, which in turn can increase the blood sugar value.

Table 1.—*Summary of the data of 10 patients with tic douloureux and abnormal results of glucose tolerance tests*

| Patient | Age, yr | Sex | Site of facial pain: side, division | Blood glucose content (after 100-g glucose meal), mg/100 ml | | Glucosuria present | Diabetic relatives |
|---------|------------|-----|--|---|-------|-----------------------|--------------------------|
| | | | | 1 hr* | 2 hr† | | |
| 1 | 58 | F | Left, third | 202 | 153 | No | None |
| 2 | 60 | F | Left, second and third | 170 | 100 | No | Mother |
| 3 | 61 | F | Left, second and third | 178 | 179 | No | None |
| 4 | 64 | M | Right, second | 270 | 246 | Trace | Not known |
| 5 | 68 | F | Right, second and third | 167 | 116 | No | Nephew's two children |
| 6 | 69 | M | Right, first and second | 188 | 112 | Not known | None |
| 7 | 72 | F | Right, second and third | 246 | 270 | Not known | None |
| 8 | 75 | F | Left, first and second | 202 | 172 | No | None |
| 9 | 77 | M | Right, first, second and third | 303 | 288 | Trace | Not known |
| 10 | 81 | M | Right, first and second | 163 | 159 | No | None |

* Upper limit, 160 mg/100 ml.

† Upper limit, 105 mg/100 ml.

Both possible conditions are not likely to be applicable to the 30 patients, because abnormal blood sugar values were found in a few patients who were not limited as to diet, and in whom surgical relief of pain had been obtained.

It may be entirely possible that tic douloureux is a symptom of diabetes mellitus. Recognition of this possibility may lead to a better understanding both of tic douloureux and of diabetes mellitus, and hence to more precise treatment of both entities.

This report is thought to be the first to demonstrate an association of diabetes mellitus and tic douloureux.

CONCLUSION

Tic douloureux may be a symptom of diabetes mellitus. Of 30 patients with tic douloureux, whose blood sugar values were not previously known, 10 had abnormally high values, in the range of those of patients

with diacetes mellitus. We believe that the 10 cases are the first to be presented as demonstrating an association of diabetes mellitus and tic douloureux. We suggest that patients with tic douloureux, whose status in regard to diabetes mellitus is not known, be given glucose tolerance tests to establish the presence or absence of diabetes mellitus.

REFERENCES

1. Structural aspects of trigeminal neuralgia: a summary of current findings and concepts. Jannetta, P., and others. *J. Neurosurg.* 26 (part 2, suppl.): 109-190, 1967.
2. Conn, J. W.: The spontaneous hypoglycemias; importance of etiology in determining treatment. *J.A.M.A.* 115: 1669-1675, 1940.