Bruitst of the Head and Neck

BY LAUREN K. WELCH, M.D., AND WILLIAM J. CROWLEY, M.D.

Abstract:

Three hundred twenty male ambulatory outpatients were studied for the presence of bruits of the head and neck as well as for other clinical and laboratory characteristics pertinent to the vascular system. One hundred sixteen were referred for evaluation without medical or neurological complaint. Neck bruits were heard in only three of the 320 men.

ADDITIONAL KEY WORDS

auscultation venous hum prevalence men carotid stenosis symptomatic asymptomatic

Introduction

Although knowledge of bruits in the head and neck has existed for a long time, their significance is still controversial. Bruits have been reported as indicative of cervical arterial narrowing as present in many “normal individuals,” and as heard in conditions other than vascular stenosis. Some patients with angiographically demonstrated cervical atherosclerosis have no abnormalities upon auscultation. Several investigators suggest that cervical bruits have little prognostic significance, but others are convinced that certain neck bruits do indicate underlying arterial pathology.

The purpose of this communication is to record the prevalence of bruits in both healthy and neurologically symptomatic men seen at the School of Aerospace Medicine. It is hoped that additional data of this type, from carefully studied populations, can help to establish the significance and prevalence of bruits in healthy and pathological states.

Methods

Medical records of 320 men seen consecutively in neurological consultation in the School of Aerospace Medicine from 1965 to 1967 were reviewed.

Candidates for special assignment with no general or neurological symptoms comprised 116 of the 320 men. The remaining 204 men

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*The method used in determining the blood sugar values was the ferricyanide method using plasma. It was put out by Technicon Instrument Company. The range of normal for the laboratory was 80 to 120 mg/100 cc.
TABLE 1
Type of Neurological Complaint in Patients Referred for Study

<table>
<thead>
<tr>
<th>No. of patients</th>
<th>Reason for referral</th>
</tr>
</thead>
<tbody>
<tr>
<td>55</td>
<td>Syncope</td>
</tr>
<tr>
<td>13</td>
<td>Vertigo</td>
</tr>
<tr>
<td>11</td>
<td>Migraine</td>
</tr>
<tr>
<td>3</td>
<td>Amaurosis fugax</td>
</tr>
<tr>
<td>122</td>
<td>Various; e.g., EEG abnormality and head trauma</td>
</tr>
<tr>
<td>Total</td>
<td>204</td>
</tr>
</tbody>
</table>

TABLE 2
Age Range of the Population Studied

<table>
<thead>
<tr>
<th>Age, years</th>
<th>No. of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-29</td>
<td>80</td>
</tr>
<tr>
<td>30-39</td>
<td>165</td>
</tr>
<tr>
<td>40-49</td>
<td>68</td>
</tr>
<tr>
<td>50-59</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>320</td>
</tr>
</tbody>
</table>

TABLE 3
Family History of Vascular Disease Among the Population Studied

<table>
<thead>
<tr>
<th>Type of vascular disease</th>
<th>No. of relatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myocardial infarction</td>
<td>160</td>
</tr>
<tr>
<td>Other heart diseases</td>
<td>235</td>
</tr>
<tr>
<td>Stroke</td>
<td>126</td>
</tr>
<tr>
<td>Other</td>
<td>84</td>
</tr>
<tr>
<td>Total</td>
<td>605</td>
</tr>
</tbody>
</table>

were referred with complaints as noted in table 1. Age distribution is seen in table 2. An analysis of 605 relatives with a history of vascular disease is recorded in table 3. Height-weight ratios and percent of body fat are compared in table 4, where a direct correlation between the two is evident. Clinical and laboratory abnormalities are listed in table 5.

Bruits were heard in three of the 320 men, with one each being in the left and right suprACLAVICULAR fossae, while the third was located over the left common carotid artery. The latter patient had no abnormalities either on alternate carotid artery compression or ophthalmodynamometry. EEG abnormalities were found in two of the three men with cervical bruits. The man whose bruit was in the right suprACLAVICULAR fossa had right temporal theta activity at rest, and left hemisphere slowing evoked by left carotid compression.

Comment
This study found bruits to be present in less than 1% of both healthy and symptomatic men. In comparing these findings with other investigations, the selected nature of the population under examination is emphasized. In contrast to the low prevalence of bruits is the much higher frequency of other findings, including neurological and medical abnormalities which might be anticipated to correlate with occurrence of neck bruits.

Sedimentation rate, hemoglobin, hematocrit, and other blood studies were normal in this series, suggesting that blood viscosity, one of the physical factors responsible for arterial bruits, was not altered. Bruits are more common in females, and our study was confined to males.

Prevalence of arterial bruits in the necks of patients not suspected of having cerebral vascular disease, and in "normal individuals," has varied from 3% to 43%. Most investigators feel that these bruits indicate
altered hemodynamics, but their diagnostic and prognostic significance is not clear. Possible reasons for disagreement include the lack of a uniform system for grading neck bruits and the thoroughness with which the physical examination is accomplished. Clinicians must not only distinguish murmurs transmitted from the precordium, venous hums and murmurs associated with anemia, but they must also determine whether the patient is quiet or anxious, whether he has exercised just prior to examination, and what the effects of general body and neck posture are upon the auscultatory findings. Bruits may become spontaneously inaudible, and their frequency diminishes with age. The amount of pressure exerted through the stethoscope against the neck may determine whether or not a bruit is heard. Finally, there may be variability in auditory acuity due to high or low frequency hearing loss among examiners.

Our finding of few spontaneous neck bruits suggest that they are rare in healthy adult males under age 50 and even in many neurologically symptomatic adults at rest. We believe that the presence of a nontransmitted neck bruit in the adult indicates a hemodynamic abnormality, the nature of which can be elucidated only by more systematic physical and laboratory diagnostic methods.

References

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