

Anemia: An Overlooked Etiologic Factor for Dizziness in the Inpatient Setting

Objectives

- 1) To determine the incidence of anemia as a causative factor for dizziness in the inpatient setting;
- 2) To analyze the anemic dizzy patient case to determine anemia etiology and treatment, if any; and
- 3) To raise awareness of this problem among referring physicians and other otolaryngologists.

Methods

Charts from inpatient consults for dizziness were examined from 2011 to the present at our institution. Important parameters were examined: symptoms such as lightheadedness when standing, incidence of anemia or borderline anemia, etiology of anemia if known, treatment of anemia if any. Statistical analysis via chi square analysis.

Results

87 charts were available for review with adequate documentation for the purposes of this study. 78% of the inpatient consultations for dizziness were noted to have anemia or borderline anemia. 63% of these patients had lightheadedness upon standing as an important symptom.

Figure 1.

Age or gender group	Hb threshold (g/dl)	Hb threshold (mmol/l)
Children (0.5–5.0 yrs)	11.0	6.8
Children (5–12 yrs)	11.5	7.1
Teens (12–15 yrs)	12.0	7.4
Women, non-pregnant (>15yrs)	12.0	7.4
Women, pregnant	11.0	6.8
Men (>15yrs)	13.0	8.1

WHO's Hemoglobin thresholds used to define anemia (1 g/dL = 0.6206 mmol/L).

Discussion

The WHO hemoglobin thresholds were used to define anemia (Figure 1). The brainstem, in particular the pons, can be adversely affected by anemia (Figure 2). In particular, the vestibular nuclear complex, which is located primarily in the pons but also extends caudally into the medulla, can be subjected to low oxygen supply due to anemia. Additionally, the inner ear is completely supplied by the labyrinthine artery, which can be a branch of the anterior inferior cerebellar artery (AICA) or occasionally a direct branch of the basilar artery (Figure 3). Multiple other brainstem and brain structures can be affected by anemia. These include but are not limited to: Vestibular commissures, cerebellum, central tegmental tract, and inferior and superior cerebellar peduncles to name just a few.

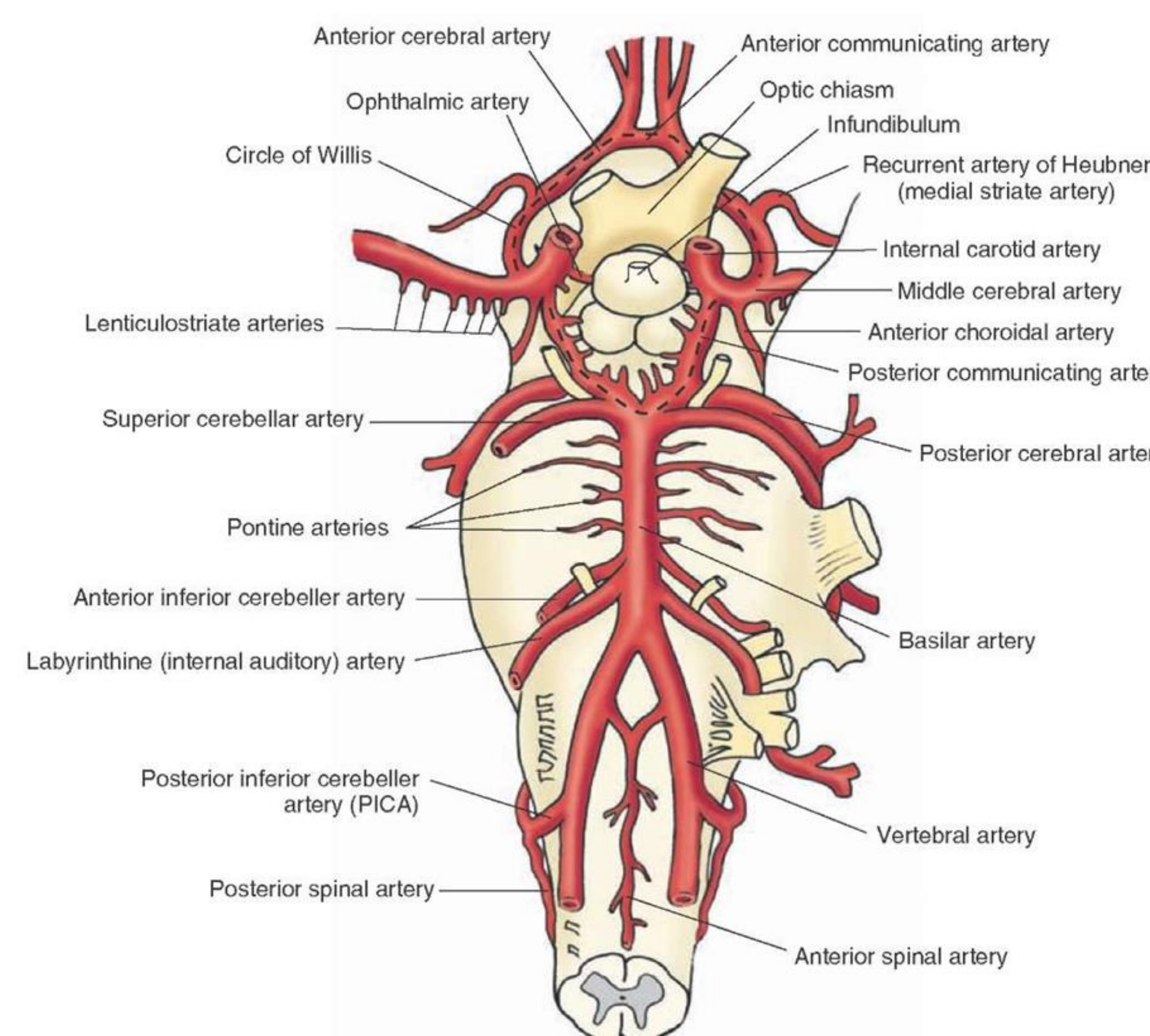


Figure 2.

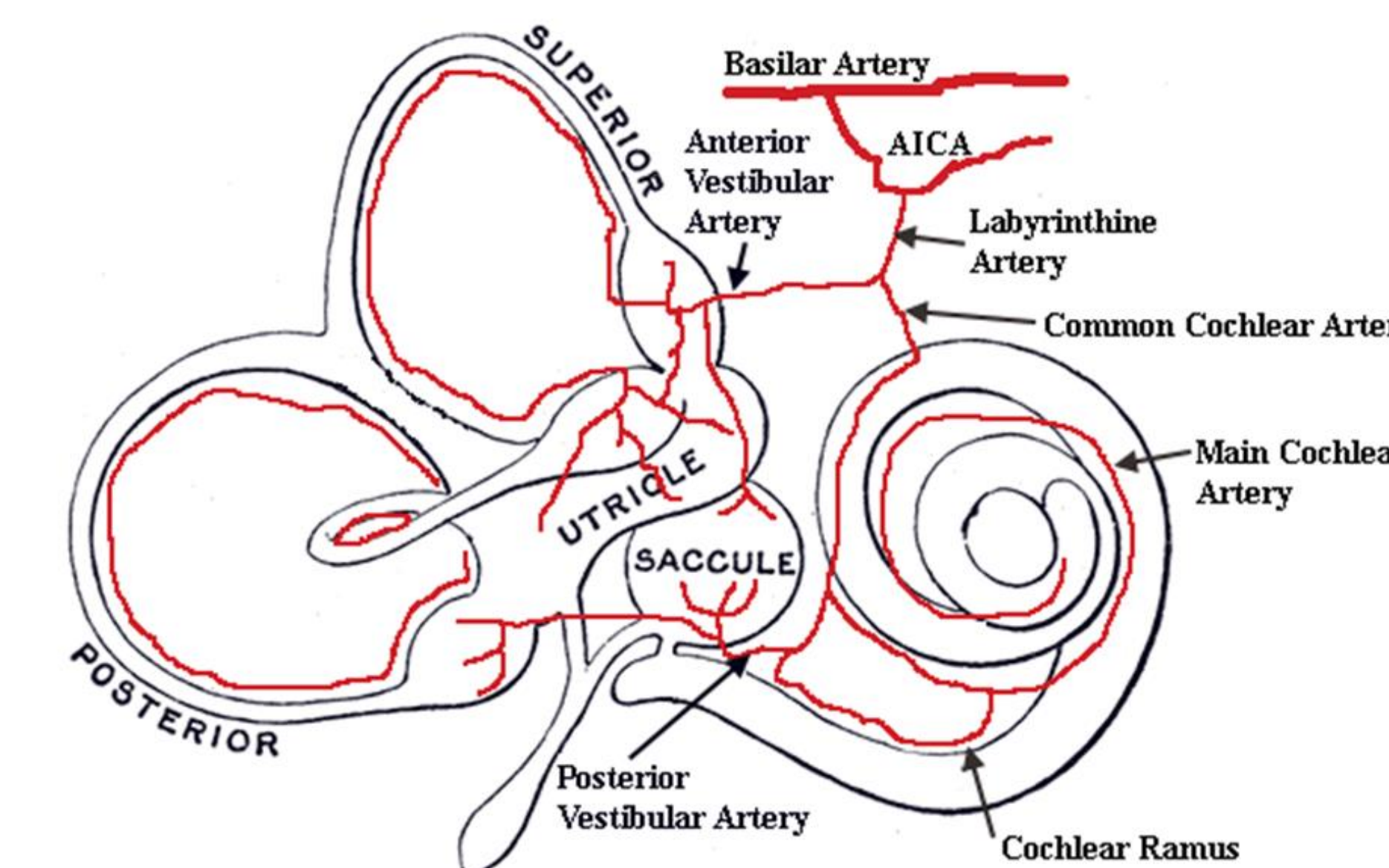


Figure 3.

Conclusion

Anemia is an important etiologic factor for dizziness in the inpatient population. Awareness of this factor among healthcare providers is low. Surprisingly, many of the anemic patients in this study had little or no workup for anemia. Lightheadedness when standing is an important symptom in the diagnosis of anemia related dizziness.

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