Letters to the Editor

Clinical Biochemistry Parameters in C57BL/6J Mice after Blood Collection from the Submandibular Vein and Retroorbital Plexus

Dear Editor,

I would like to suggest that JAALAS, its authors, and reviewers, be somewhat more accurate in using anatomical nomenclature. The recent article by Fernandez and colleagues[1] on clinical chemistry parameters in mice includes the words submandibular vein and retroorbital plexus in its title, implying that the common laboratory mouse (*Mus musculus*) has a submandibular vein and a retroorbital venous plexus. While there is no denying that in recent years the term submandibular vein has crept into common usage as a likely consequence of the lay and laboratory animal literature using those words to describe a blood collection site,[1,2,5] the correct term is the facial vein (*v. facialis*) or linguofacial vein (*v. linguofacialis*), depending on the exact site of blood collection. It is also possible to obtain blood from the nearby maxillary vein (*v. maxillaris*). Using *Nomina Anatomica Veterinaria*[3] as a guide, there is no submandibular vein in the mouse.

Likewise, the term retroorbital plexus is incorrect, with retroorbital sinus being the proper term for the mouse. In fairness to the authors, the proof of this claim is not easy to find in the laboratory animal literature and, in fact, one commonly used atlas of laboratory mouse anatomy illustrates a retroorbital venous plexus.[6] In 1949 Kuga[4] suggested the presence of an ophthalmic venous sinus in mice, which was then confirmed by Yamashita in 1979.[8] In 1980 Yamashita and colleagues[9] provided a detailed description of the spatial relationships of the mouse orbital venous sinus that was based on serial sections of the orbit. In the same year Timm[7] published a description of the mouse orbital venous sinus based on latex injections and corrosion casts of the venous structures of the head.

Although most of us will understand what authors are referring to when using terms such as the submandibular vein or retroorbital plexus, proper terminology allows us to communicate in a professional and unambiguous manner.

Sincerely,
Jerald Silverman, DVM
Professor and Director, Department of Animal Medicine
University of Massachusetts Medical School

References

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3. **International Committee on Veterinary Gross Anatomical Nomenclature**. [Internet]. 2005. Nomina anatomica veterinaria, 5th ed. [Cited 18 May 2010]. Available at: http://www.wava-amav.org/Downloads/nav_2005.pdf
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6. **Popesko P, Rajtova V, Horak J**. 1992. A colour atlas of the anatomy of small laboratory animals, vol 2. London (UK): Wolfe Publishing.
7. **Timm KI.** 1980. Peri-orbital bleeding technique for the mouse, hamster, and rat – anatomical consideration. Synapse **13:**14–15.
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Response to Dr Silverman's Letter to the Editor:

In response to the letter from Dr Silverman regarding our recent article entitled "Clinical Biochemistry Parameters in C57BL/6J Mice after Blood Collection from the Submandibular Vein and Retroorbital Plexus",[1] we have the following comments.

First, we agree with and appreciate the comments sent by Dr Silverman. It would have been more accurate and scientifically strict to use the suggested terms.

Second, we decided to use these terms because they have been commonly used in laboratory animal literature to describe blood collection sites. Although the terms we used are known by most of the professionals in the field, they seem to be scientifically incorrect.

Third, as professionals in the field of Laboratory Animal Science, we have no objections to making corrections if they are appropriate. However, in relation to our study, we offer the following comments:

A) Use of the term retroorbital sinus instead of retroorbital plexus. In the anatomical atlas we used, this site is referred as ophthalmic vein/plexus ophthalmicus (p 122).[2]
B) Use of the term facial vein instead of submandibular vein. In the anatomical atlas we used, this site is referred as facial vein (p 120).[2]

Finally, let us know if you need further information to deal with this topic.

Sincerely,
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References

1. **Fernandez I, Pena A, Del Teso N, Perez V, Rodriguez-Cuesta J.** 2010. Clinical biochemistry parameters in C57BL/6J mice after blood collection from the submandibular vein and retroorbital plexus. J Am Assoc Lab Anim Sci **49:**202–206.
2. **Popesko P, Rajtova V, Horak J**. 1992. A colour atlas of the anatomy of small laboratory animals, vol 2. London (UK): Wolfe Publishing.

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