Wilford CL, Farrell KA, Jefferson EP, Moyer MR, Newbury SP, Saxton MA, Scarlett JM. 2008. The Association of Shelter Veterinarians veterinary medical care guidelines for spay-neuter programs. JAVMA **233:**74–86.
4. **Schlichting A, Haberstroh J, Tasai PP, Stelzer HD, Hackbarth H.** 2010. Stress response of mice under different volatile anesthesia, p 178-191. In: Kaliste E. Proceedings of new paradigms in laboratory animal science. Ipswich (UK): Federation for Laboratory Animal Science Associations.
5. **Tanaka S, Tsuchida H, NambaH, Namiki A**. 1994. Clonidine and lidocaine inhibition of isoflurane-induced tachycardia in humans. Anesthesiology **81:**1341–1349.
6. **Tanaka S, Tsuchida H, Nakabayashi K, Seki S, Namiki A**. 1996. The effects of sevoflurane, isoflurane, halothane, and enflurane on hemodynamic responses during an inhaled induction of anesthesia via a mask in humans. Anesth Analg **82:**821–826.
7. **Valentine H, O Williams W, Maurer KJ.** 2012. Sedation or inhalant anesthesia before euthanasia with CO_2 does not reduce behavioral or physiologic signs of pain and stress in mice. J Am Assoc Lab AnimSci **51**:50–57.
8. **Yli-Hankala A, Randell T, SeppalaT, Lindgre L**. 1993. Increases in hemodynamic variable and catecholamine levels after rapid increase in isoflurane concentration. Anesthesiology **78:**266–271.

Total IgE as a Serodiagnostic Marker to Aid Murine Fur Mite Detection

Dear Editor,

This is a letter in reference to the article "Total IgE as a Serodiagnostic Marker to Aid Murine Fur Mite Detection" by Roble and colleagues.[8]

I am a Professor of Veterinary Anatomy in a higher education institution (graduated in 1955 and been an anatomist ever since) and one of the 5 members and the sole representative of the 2 Americas in the editorial board of the 5th edition of the Nomina Anatomica Veterinaria (NAV),[6] the international nomenclature of veterinary anatomy. I am also the author of 414 publications and familiar with hundreds of publications in the mammalian anatomy (domestic and wild animals, and laboratory animals alike), as well as the author of one poster on the Anatomy of the Mouse,[2] one poster on the Anatomy of the Rat,[3] and most recently of the Comparative Anatomy of the Mouse and the Rat – A Color Atlas and Text.[1] I am also the Editor of the 3rd edition of the Illustrated Veterinary Anatomical Nomenclature[4] based on the 5th edition of the NAV.[6]

Regarding the correct naming of the submandibular vein or the submandibular bleeding method in mice, in this letter I am presenting the details of the roots of the external jugular V. (V. jugularisexterna), which are targets for the bleeding method.

Three references are taken into consideration: 1) Popesko and colleagues,[7] 2) Cook,[5] and 3) Takamasa and colleagues.[9]

Popesko[7] illustrated the external jugular V. with its 2 roots, the linguofacial V. and the maxillary V., all correct anatomical terms (the illustration does not show where the lingual V. originated from the linguofacial and separates it from the facial V.). However, during the above mentioned blood collection method, either the linguofacial or the facial V. is subject to puncture, and not the lingual V.

Cook[5] illustrated the facial blood vessels (Figure 84), the superficial vessels of the head (Figure 85), and the dorsolateral dissection of the head (Figure 86). In Figure 84, the Facial V. is wrongly labeled as "Anterior facial V" and the Transverse facial V. is wrongly labeled as "Superficial temporal V." In Figure 85, the Superficial temporal V. is wrongly labeled as "Posterior facial V," the Transverse facial V. is wrongly labeled as "Superficial temporal V," and the Facial V. is wrongly labeled as "Anterior facial V." In Figure 86, the Facial V. is wrongly labeled as "Anterior facial V," the Superficial temporal V. is wrongly labeled as "Internal maxillary V," and the Transverse facial V. is wrongly labeled as "Superficial temporal V."

The Takamasa team's[9] illustrations of the veins of interest in the head are labeled correctly in some cases but not in others. The facial V. is correctly labeled on pages 9, 11, 12B, 18, 19, 23A, 57, 63, 97, 99, 101, and 105. On page 17B, the transverse facial V. is wrongly labeled as "facial V." On page 109, the facial V. and the maxillary V. are correctly labeled. On page 113, the facial V. is wrongly labeled as "transverse facial V," whereas the maxillary V. is correctly labeled. On page 116, the maxillary V. is wrongly labeled.

In conclusion, the bleeding method should be called either "linguofacial" or "facial", depending on the site of puncture. The site close to the connection to the external jugular V. is the linguofacial V., whereas the site far from the external jugular V. rostrally is the facial V. These are the internationally correct names that everyone should use.

I have to add that other JAALAS articles have used this misnomer and the misnomer is widely used in the field, so that I am not pointing a finger specifically (or only) at the authors of the above-cited paper.

Respectfully submitted,
Gheorghe M Constantinescu, DVM, PhD, mult Drhc
Professor of Veterinary Anatomy and Medical Illustrator, Department of Biomedical Sciences
College of Veterinary Medicine, University of Missouri-Columbia

References

1. **American Association for Laboratory Animal Science.** 2011. Comparative anatomy of the mouse and rat. Constantinescu GM, illustrator. Memphis (TN): American Association for Laboratory Animal Science.
2. **Constantinescu GM, illustrator.** 2006. Anatomy of the mouse. Memphis (TN): American Association for Laboratory Animal Science.
3. **Constantinescu GM, illustrator.** 2007. Anatomy of the rat. Memphis (TN): American Association for Laboratory Animal Science.
4. **Constantinescu GM, Schaller O.** 2011. Illustrated veterinary anatomical nomenclature 3rd ed. New York (NY): Thieme.
5. **Cook MJ.** 1965. The anatomy of the laboratory mouse. New York (NY): Academic Press
6. **International Committee on Veterinary Gross Anatomical Nomenclature.** [Internet]. 2005. Nomina Anatomica Veterinaria, 5th ed. [Cited April 2012]. Available at: http://www.wava-amav.org/nav_nev.htm
7. **Popesko P, Rajtova V, Horak J.** 1992. A colour atlas of anatomy of small laboratory animals, vol 2. Boca Raton (FL): CRC Press.
8. **Roble GS, Boteler W, Riedel E, Lipman NS.** *2012.* Total IgE as a serodiagnostic marker to aid murine fur mite detection. J Am Assoc Lab Anim Sci **51:**199–208.
9. **Takamasa I, Hiroshi Y, Toshiyuki H.** 2001. A Color atlas of sectional anatomy of the mouse. Tokyo (Japan): Adthree Publishing.

Response to Dr Constantinescu's Letter to the Editor:

In response to the letter from Dr Constantinescu regarding our recent article entitled "Total IgE as a Serodiagnostic Marker to Aid in Murine Fur Mite Detection,"[3] we have the following remarks. We thank Dr Constantinescu for the comments and in-depth references that he provided and agree that scientific accuracy would have been improved with the use of these anatomical terms. Based on the information provided by Dr.

Constantinescu, blood was collected from the linguofacial or facial vein. The authors recognize that the exact location of the blood draw may not always be consistent due to variability in handler restraint or experience. We chose to refer to submandibular vein blood collection as this name has become accepted and common place within the laboratory animal literature.[1,2,4] In the experience of the authors, this term is also inculcated within Institutional Animal Care and Use Blood Collection Guidelines for multiple animal facilities. As this misnomer has been addressed previously,[4] perhaps it would be more accurate to describe this method as the submandibular or mandibular venipuncture technique to encompass its anatomical location and immediately recognizable name.

Sincerely,
Gordon Roble, DVM
Clinical Veterinarian
New York University

William Boteler
Scientific Director
XpressBio

Elyn Riedel, MA
Senior Research Biostatistician Manager
Memorial Sloan-Kettering Cancer Center

Neil Lipman, DVM, DACLAM
Director of the Center of Comparative Medicine and Pathology
Memorial Sloan-Kettering Cancer Center and Weill Cornell Medical College

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. **Golde W, Gollobin P, Rodriguez L**. 2005. A rapid, simple, and humane method for submandibualr bleeding of mice using a lancet. Lab animal **34:**39–43.
3. **Roble G, Boteler W, Riedel E, Lipman NS**. 2012. Total IgE as a serodiagnostic marker to aid murine fur mite detection. J Am Assoc Lab Anim Sci **51:**199–208.
4. **Silverman 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:**400; author reply 400.

Letters to the Editor

Letters discuss material published in *JAALAS* in the previous 3 issues. They can be submitted through email (journals@aalas.org) or by regular mail (9190 Crestwyn Hills Dr, Memphis, TN 38125). Letters are not necessarily acknowledged upon receipt nor are the authors necessarily consulted before publication. Whether published in full or part, letters are subject to editing for clarity and space. The authors of the cited article will generally be given an opportunity to respond in the same issue in which the letter is published.