



A Standardised Data Collection Procedure for Findings and Diagnoses in Veterinary Histopathology



Steinbrunn, CB⁽¹⁾, Ovelhey, A⁽¹⁾, Kösters, S⁽¹⁾, Schulz-Schaeffer WJ⁽³⁾, Czerny, CP⁽⁴⁾, Kreienbrock, L^(1,2)

¹Department of Biometry, Epidemiology and Information Processing, University of Veterinary Medicine, Hannover, Germany,

²WHO Collaborating Centre for Research and Training in Veterinary Public Health,

³Department of Neuropathology, Georg-August-Universität Göttingen, Germany, ⁴Institute of Veterinary Medicine, Georg-August-Universität Göttingen, Germany.

Introduction

Within a study on BSE risk factors focusing on inflammatory diseases of the brain and peripheral nerve tissue, more than 500 cattle brain and other tissues are analysed for histopathological lesions in the Department of Neuropathology, Georg-August-Universität Göttingen.

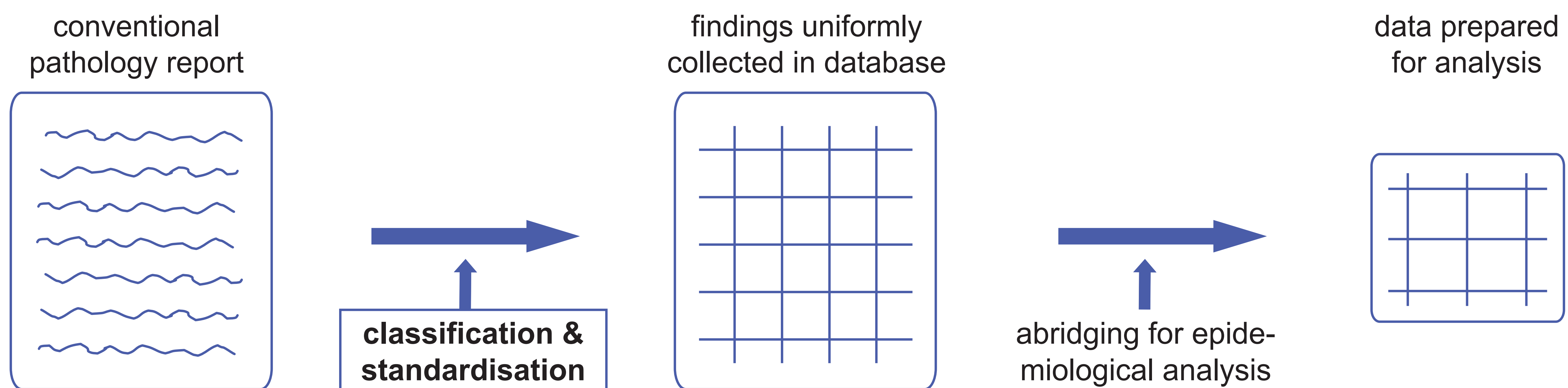
Additionally immunohistochemistry, PCR and serological antibody-screenings for various infectious cattle diseases are conducted.

Issue outlined

- ★ No broadly used system for standardised data gathering available in veterinary histopathology
- ★ High band width of formulations for histopathology findings and diagnoses
- ★ Findings and diagnoses are saved as free text

To permit good subsequent data evaluation and to avoid misclassification and bias, the extensive data have to be uniformly collected

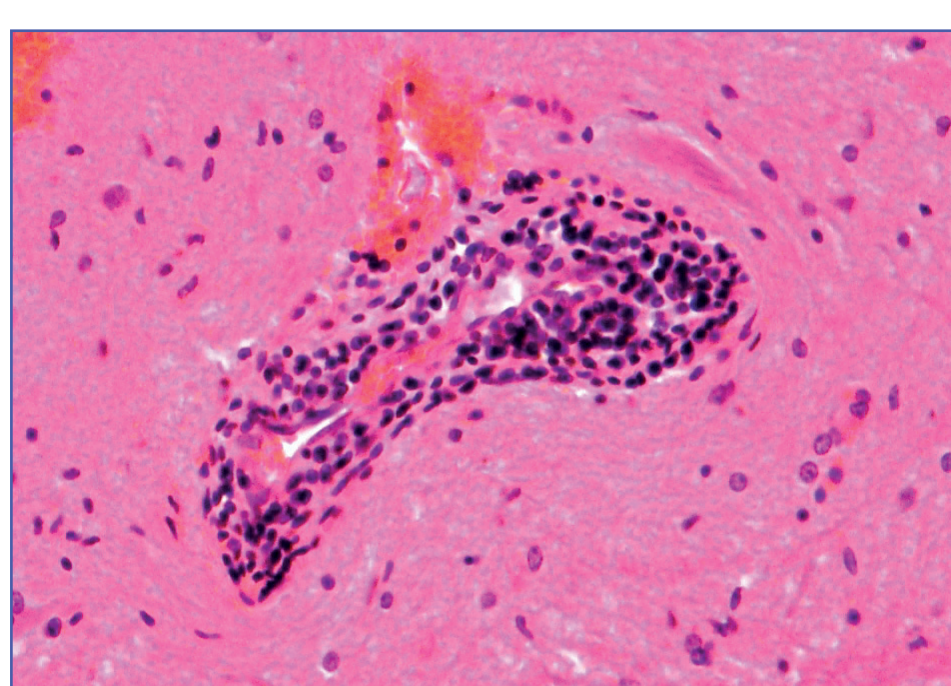
From Pathology Report to Epidemiological Data



Examples - Classification and Standardisation

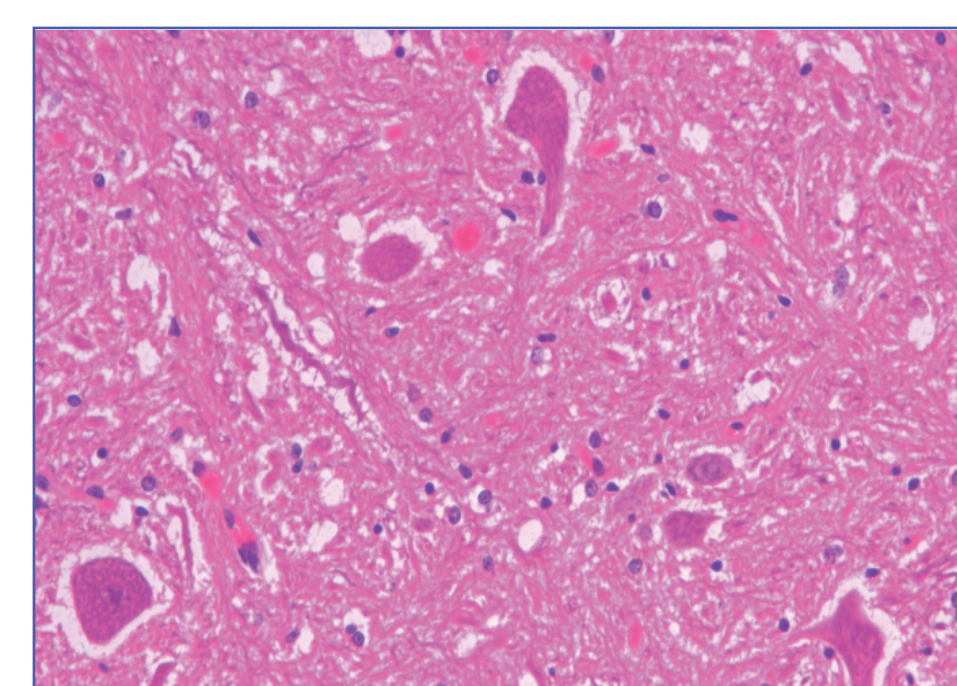
Diversity of different periphrases for two given histopathological alterations:

Example 1



Obex with moderately perivascular mononuclear infiltrates = Brainstem shows moderate lymphocytic infiltration around a blood vessel = Moderate accumulation of lymphocytes around a vein in Truncus cerebri

Example 2



Spinal marrow (anterior horn): mildly spongiform = Medulla shows mild spongiform change in the ventral horn = Mild tissue disaggregation in the anterior horn of the spinal cord

Evaluation and Strategies

- ★ Use of anatomical nomenclature given in Nomina Anatomica Veterinaria, Fifth Edition [1]
- ★ Precise definition of histopathological terms (nomenclature manuscripts [2, 3])
- ★ Avoidance of large amounts of free text input in database by presetting different elements for histopathological findings and diagnoses in database catalogues
- ★ Preparation of collected histopathological data for epidemiological analysis

References

- [1] Waibl H., Gasse H., Constantinescu G., Hashimoto Y., Simoens P. Nomina Anatomica Veterinaria Fifth Edition [Internet]: World Association of Veterinary Anatomists, International Committee on Veterinary Gross Anatomical Nomenclature 2005 [cited 2009 Feb 24]. Available from http://www.wava-amav.org/nav_nev.htm
- [2] Keenan C, Hughes-Earle A, Case M, Stuart B, Lake S, Mahrt C, Halliwell W, Westerhouse R, Elwell M, Morton D, Morawiez G, Rittinghausen S, Deschl U, Mohr U: The North American Control Animal Database: A Resource Based on Standardised Nomenclature and Diagnostic Criteria, Toxicol. Pathol. 2002; 30(1): 75-79
- [3] Kaufmann W, Nolte T, Rinke M., Rittinghausen S., Morawiez G. International Harmonization of Nomenclature and Diagnostic Criteria: INHAND [Internet]. European Society of Toxicologic Pathology, Registry of Industrial Toxicology Animal-data 2005 Nov 21 [cited 2009 Feb 24]. Available from: <http://www.toxpath.org/inhand.asp>.