

25 years of CNS histopathology of bovines with clinical suspicion of BSE in Denmark 2001 to 2025

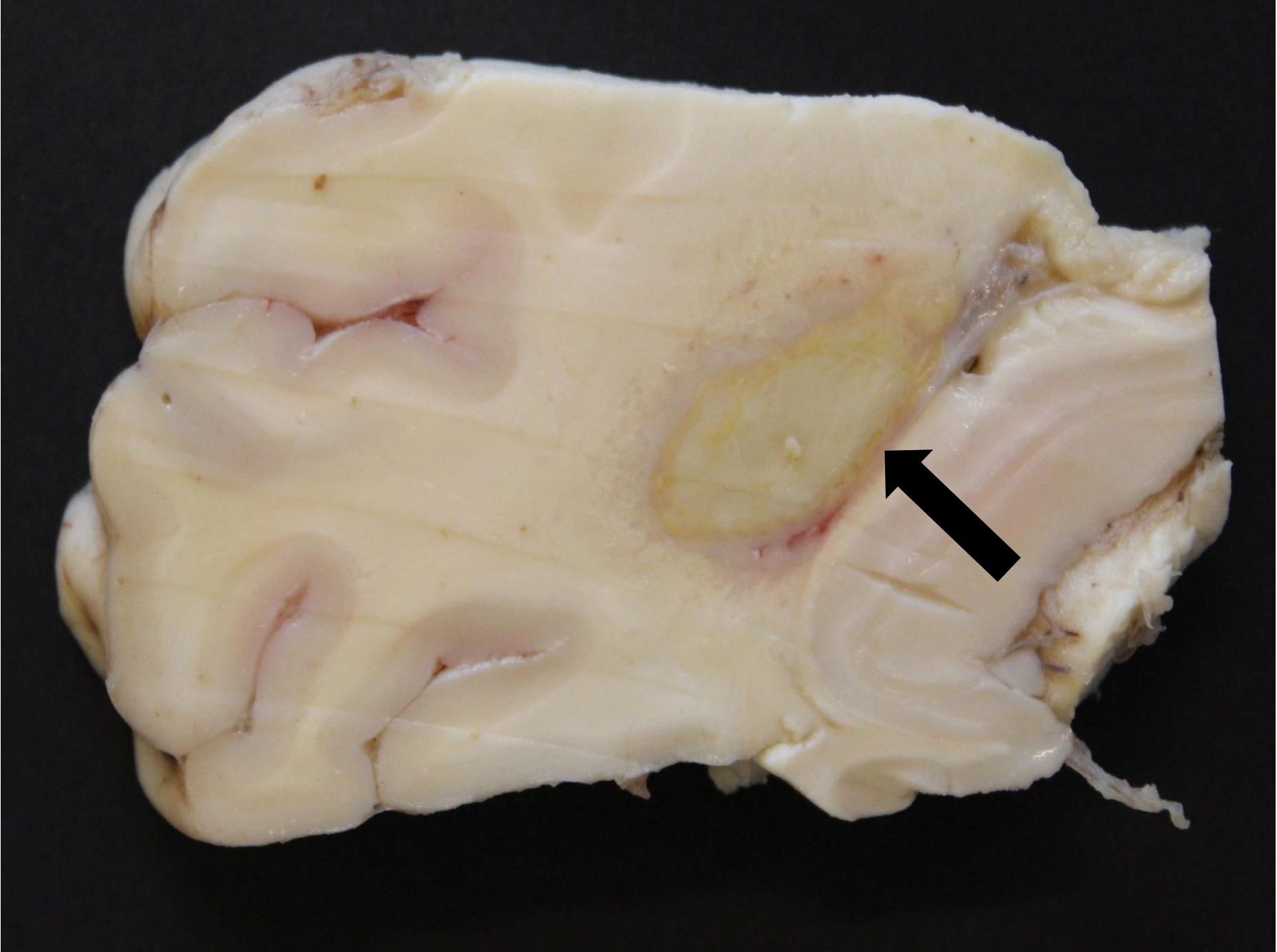
Tim K. Jensen, Veterinary pathologist, Phd, DVM

The first case of Bovine Spongiform Encephalopathy (BSE) in Denmark was reported in 1992 in an UK imported Highland Cattle. Since 2000 a total of 18 indigenous BSE cases have been found in cattle. The last case was found in 2009 in a normally slaughtered 14 years old dairy cow.

The aim of this study was to summarize the pathological findings in 205 bovines with clinical suspicion of BSE in Denmark 2001 to 2025, the period with the author as main investigator.

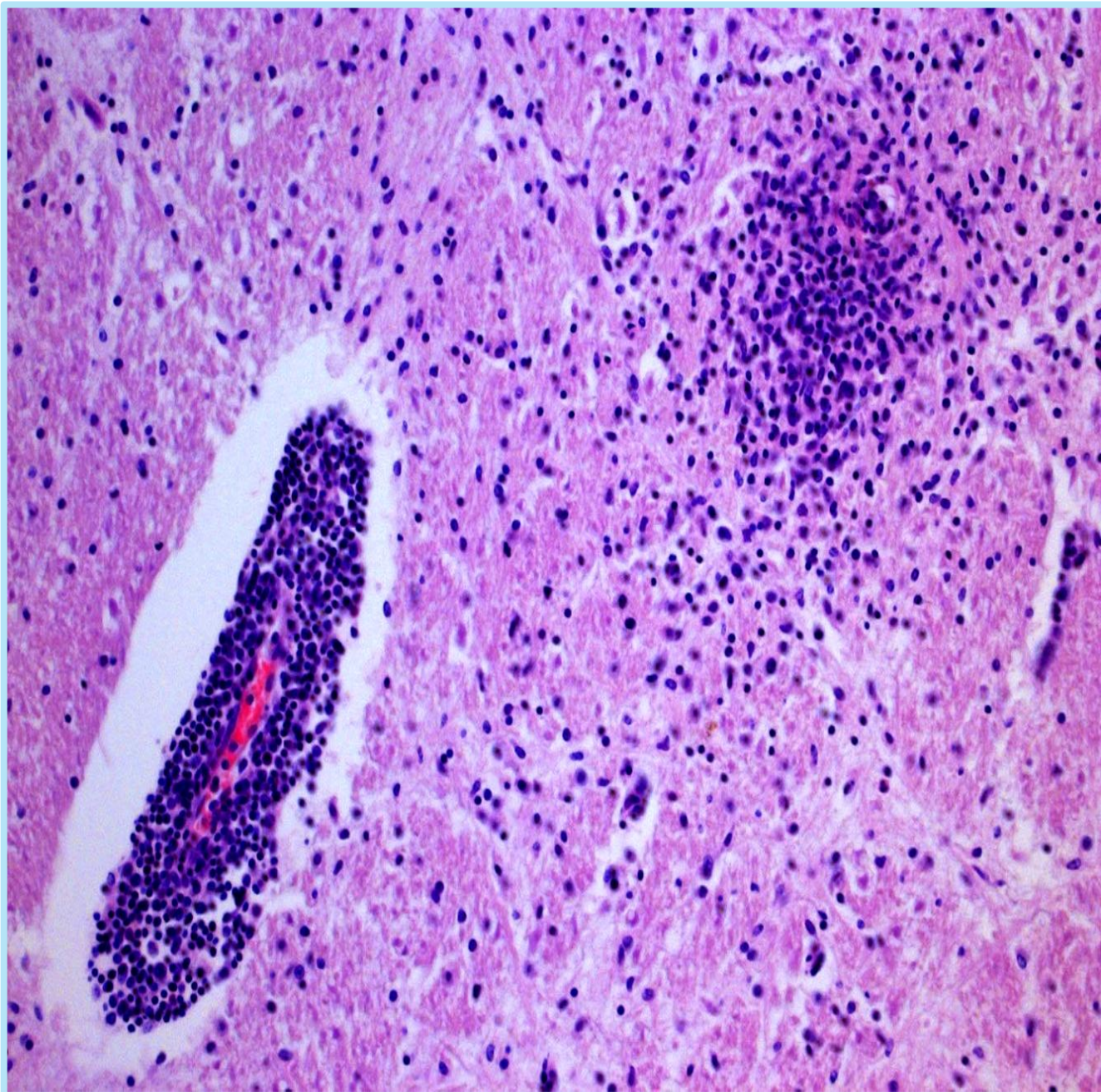
The annual number of suspicions peaked in 2001 with 71 cases, followed by a gradual decrease until 2005. From 2006 to 2015 a mean number of 3 cases were submitted. In the same period the total bovine population has decreased from 1.8 mil to 1.4 mil. During the last 10 years only 3 cases were analysed.

Two cases of BSE were diagnosed as listed in Table 1. The most prevalent differential diagnosis was listeriosis (n=111), characterized by multifocal, necrotizing, non-suppurative encephalitis confined to the brain stem region. Ten cases showed encephalitis characterized by low grade multifocal, non-suppurative cuffings, mainly in cerebrum and brain stem. Non specific etiology was suspected. In another twenty cases a specific diagnose was made, Table 1 and figures. Forty eight (24%) of the cases revealed no significant lesions, whereas eight cases were unsuitable due to autolysis.



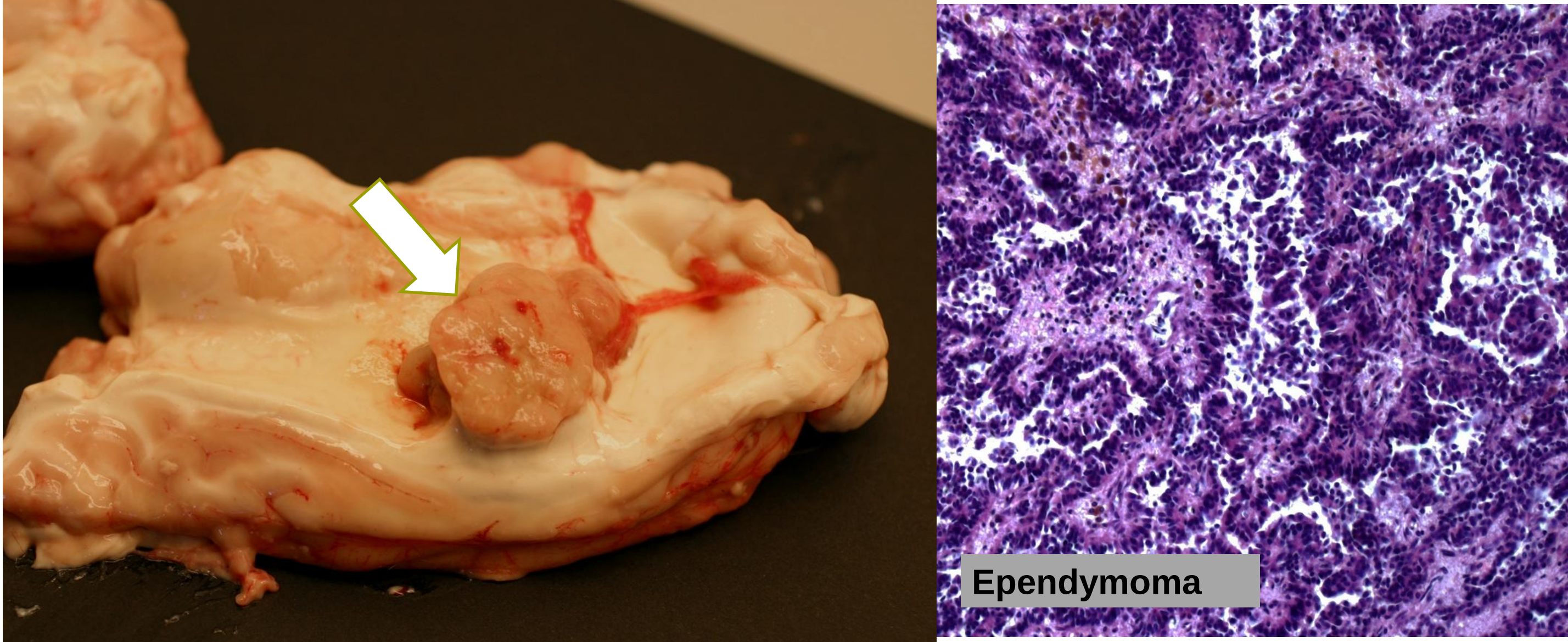
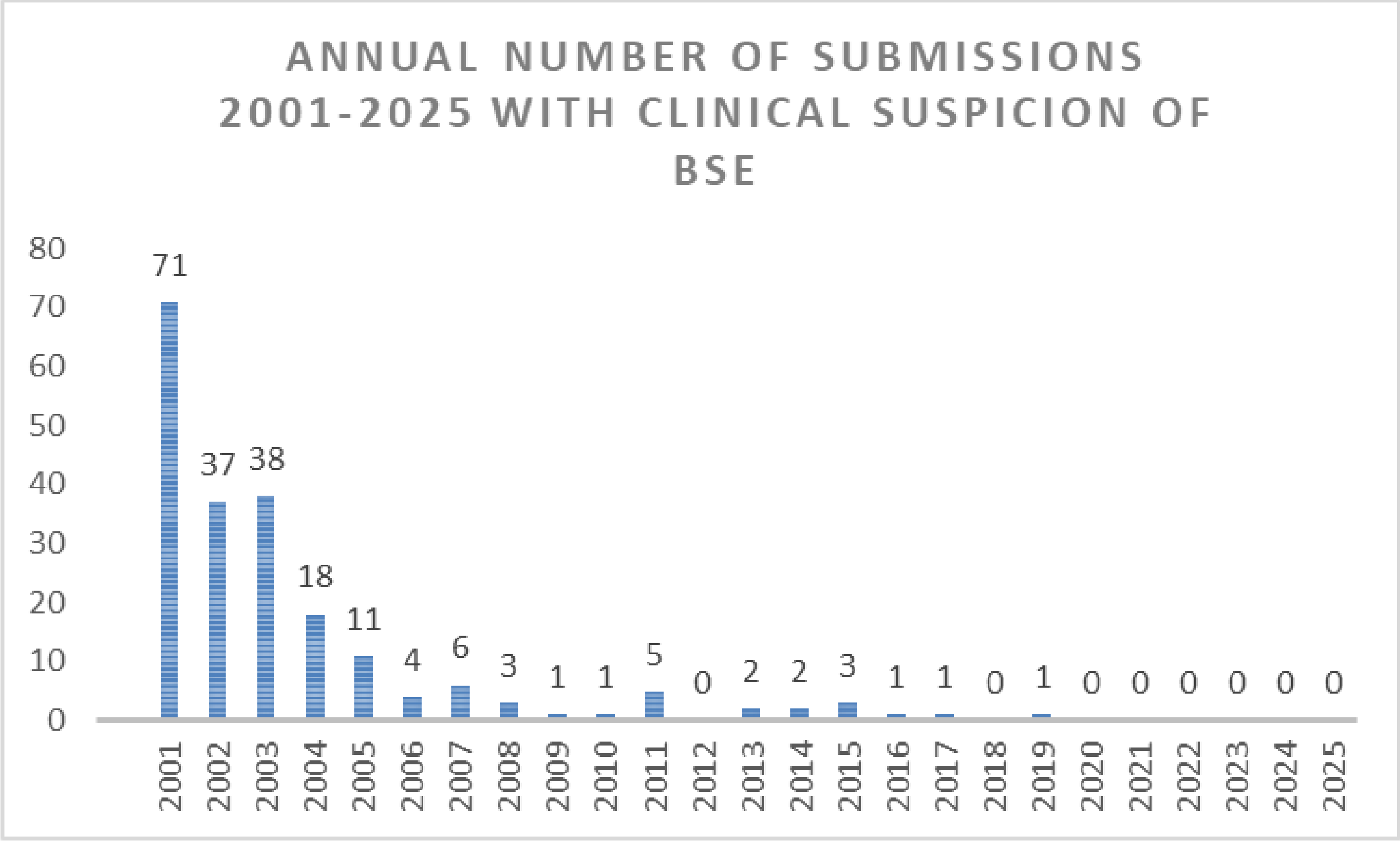
Cerebral abscess. By culture *Trueperella pyogenes* was identified.

During 2001 to 2025 a total of 205 bovines were submitted with clinical suspicion of having BSE. In two cases BSE was confirmed. The most common differential diagnosis was listeriosis, found in 54% of the cases. Listeriosis was characterized by multifocal, necrotizing, non-suppurative encephalitis confined to the brainstem region.



Listeriosis

Table 1. Differential diagnoses of bovines with clinical suspicion of BSE in Denmark 2001 to 2025																	
Diagnosis \ Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total	
Listeriosis	31	20	29	10	5	3	4	1			3		1		4	111	
Lesions not found	25	9	7	2	2		1	1						1	1	49	
Encephalitis	6	2	1	1												10	
Unsuitable/autolysis	2	1		2	1					1				1		8	
Hydrocephalus	1				1	1	1	1								5	
Intracerebral oedema	1			1	2											4	
Pituitary abscess	1	1		1									1			3	
Cerebral abscess															1	1	
Ependymoma		1									1					2	
Subdural haemorrhage	2															2	
Hepatic spongiform encephalopathy		1		1												2	
BSE	1		1													2	
Cerebellar necrosis and degeneration											1					1	
Meningial lymphosarcoma		1														1	
Malignant adenoma, pineal gland									1							1	
Cerebral malacia		1														1	
Neural storage disease	1															1	
Number of submissions per year	71	37	38	18	11	4	6	3	1	1	5	0	2	2	5	205	



Tumor (ependymoma), arising from the epithelial lining of the ventricular cavities, compromising the drainage of cerebrospinal fluid thereby causing hydrocephalus.