

Format: Abstract

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Electroencephalographic responses of halothane - anaesthetised calves to slaughter by ventral-neck incision without prior stunning.

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Abstract

AIM: To investigate whether the **electroencephalographic (EEG) responses to slaughter by ventral-neck incision** without **prior stunning** may be perceived as painful in **halothane-anaesthetised calves**.

METHODS: Fourteen Angus steers were minimally anaesthetised with halothane, using an established anaesthesia protocol. EEG indices were recorded bilaterally for 5 minutes **prior** to and 5 minutes following **ventral-neck incision**. A single **incision** was made in the ventral aspect of the neck, severing all tissues ventral to the vertebral column including the major blood vessels supplying and draining the head. Changes in the median frequency (F50), 95% spectral edge frequency (F95) and total power of the EEG (Ptot) were used to investigate the effects of **ventral-neck incision**. At the completion of the experiment, brains of **calves** were examined histologically.

RESULTS: During the 30 seconds following **ventral-neck incision**, the F95 and Ptot showed significant changes ($p < 0.05$) compared with pre-treatment values. The F50 increased significantly from recordings from the right side of the cranium. No gross or histological abnormalities were detected in the brains following **slaughter**.

CONCLUSIONS: This study is the first investigation of the noxiousness of **slaughter by ventral-neck incision**, using EEG spectral analysis. It demonstrated that there is a period following **slaughter** where **ventral-neck incision** represents a noxious stimulus.

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