



DEFENDANT'S
EXHIBIT
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NEUROPATHOLOGY CONSULTATION

FOR THE BEXAR COUNTY FORENSIC SCIENCES CENTER

DATE CUT 7/1/02 PROSECTOR Dr E Rouse ACCESSION # 02-CX-235

HISTORY: J.G. was a 2-and-a-half- year-old hispanic female toddler who sustained head trauma initially blamed on a "fall from the cab of a 18-wheeler". Her step-mother called the EMS and at the health care facility where she was seen, a lumbar puncture showed subarachnoid hemorrhage, and no skull fractures. She died at 11 AM the next day. Subsequently it became apparent that the child has been physically abused. At autopsy there was subgaleal bruising and subdural hematoma, as well as pattern injuries to the skin.

GROSS OBSERVATIONS: There is mild to moderate cerebral edema, and a accompanying portion of dura showed a thin subdural hematoma. There is patchy subarachnoid hemorrhage. Coronal sections show fairly normal ventricular size, no intraventricular blood, and no hemiation hemorrhages, including no brainstem (Duret) hemorrhages. No gross abnormalities of the cortical ribbon or deep white matter are noted.—no midline (deep grey nuclear, callosal) petechiae, tears but small areas of white matter softening and greyish discoloration (no xanthochromia) are seen. Sections through lower brainstem and cerebellum are unremarkable.



MICROSCOPIC FINDINGS & COMMENTS:

Sections of dura show mostly recent hemorrhage trapped among the arachnoid granulations. The "oldest" areas in these dural sections show a thin membrane (upper photo), histologically consistent with a few weeks' duration. Sections of cerebral deep white matter (centrum semiovale) show, interestingly, prominent myelin tearing, foamy macrophages between the groups of disrupted white matter tracts (top photo, next page, arrows, luxol fast blue/H&E stain). An ubiquitin stain of this particular section show prominent axonal swellings (inset, arrows) which could even be found on routine sections on other slides of similar areas. A few areas show contusion-infarcts in a stage of early organization (sheets of foamy macrophages consistent with at least a weeks' duration. Older, gliotic or cystic lesions are not identified. Focally

severe acute neuronal hypoxic changes are also seen.

Myelin tearing and axonal bodies are easily found in these sections but as you know the presence of abundant axonal bodies cannot be reliably used to either precisely "date" an injury or provide evidence of more than one episode of head trauma.

NEUROPATHOLOGIC DIAGNOSIS:

Child's brain, representative sections: history of head trauma)

Cerebral edema, mild to moderate
Hemorrhagic necrosis of cerebellar tonsillar tips
(Right) subdural hematoma, mostly recent, minimal organization (approximately 10 days' duration)

Cerebral white matter: Organized contusion infarcts (7+ days' duration), myelin tearing and axonal bodies



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