

Computer Tomography (CT) Superimposition of Unidentified Skull to Postmortem Photograph of James–Younger Gang Member¹

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After attending this presentation, the participant will understand: (1) serendipitous discovery of a possible James-Younger gang member's skeleton, (2) evaluation of gunshot wound locations on postmortem photographs of gang members; and, (3) the process of craniofacial superimposition using computer tomography (CT) images of unidentified skull with postmortem photographs of Clelland D. "Clell" Miller for personal identification.

This presentation will impact the forensic science community by familiarizing forensic scientists with a new superimposition technique using CT images in an historic case. Moreover, forensic scientists will be able to adapt this technique in contemporary cases.

On September 7, 1876, the James-Younger gang robbed the First National Bank of Northfield in Minnesota. Joseph Heywood, bank clerk, was mortally wounded and a citizen, Nicolas Gustavson, was shot on the street and died three days later. Henry Mason Wheeler, a Northfield resident and University of Michigan medical student, shot and killed Clell Miller with a .50 caliber Smith Carbine. Anselm R. Manning, a Northfield merchant, shot and killed William "Bill" Chadwell also known as William "Bill" Stiles. The robbers fled Northfield with a posse in pursuit. However, before departing with the posse, Wheeler directed two classmates to disinter Miller and Chadwell's bodies from the Northfield Cemetery. Since the medical school was closed, to temporarily preserve the bodies, they stored them in barrels and submersed them in Chub Creek north of Northfield. In due course, Miller and Chadwell's bodies were shipped in barrels to the medical school to be used by students in anatomy classes.

The posse killed Charlie Pitts, also known as Samuel Wells, near Madelia, Minnesota, on September 21, 1876. Dr. John H. Murphy, Surgeon General of Minnesota, took possession of Pitts' body and purportedly gave it to an unidentified medical student to be used as an anatomical model. The Younger Brothers were captured and the James Brothers escaped eliminating their remains for analysis.

Controversy exists regarding disposition of Miller's remains. When Miller's family learned Miller's body was at the medical school, they sent Edward, Miller's brother, and Samuel Hardwicke, a lawyer, to retrieve Miller's body. They received a corpse and shipped it in a barrel filled with preservatives to Missouri. The corpse's head was damaged in transit and the alleged remains were buried in Muddy Fork Cemetery, Kearney, Missouri.

In 1880, after graduation from medical school, Wheeler practiced medicine in Northfield. He relocated in 1881 to Grand Forks, North Dakota where he remained until he retired in 1923. Although Miller's alleged remains were buried in Muddy Fork Cemetery, Wheeler claimed a skeleton he displayed in his office belonged to Miller. The Grand Forks Herald reported the skeleton was destroyed when Wheeler's office burned November 22, 1884; however, in 1985 Wheeler's son, Henry M. Wheeler, Jr., and Peter Nickle, who assisted with disposal of Wheeler's estate, refuted that claim.

When Wheeler retired, he donated a skeleton purported to belong to the man he killed in Northfield to the Odd Fellows in Grand Forks. In the mid-1980s, an auction was conducted liquidating Odd Fellows property. During the auction, a citizen searched the building,

discovered a skeleton and arranged to acquire the skeleton. In 2010 while searching for the current owner of the Smith Carbine that Wheeler used to kill Miller, a skeleton allegedly belonging to Wheeler was accidentally discovered. It was the same skeleton acquired from the Odd Fellows in the mid-1980s.

Visual examination disclosed no bullet injury evidence to the skeleton in Grand Forks. However, postmortem photographs of gang members show bullet wounds to the chest. In his memoir, Coleman "Cole" Younger, a James-Younger gang member, described both Chadwell and later, Pitts as being "shot through the heart." Miller, he described as shot by Wheeler "lay dying in the street." Using anatomical surface markings to overlay proportional drawings of the bony thorax and pectoral girdle on the postmortem photographs, it became obvious only in Miller's case that there was likelihood the bullet could have left no postcranial skeletal stigmata.

The skull and associated mandible from the skeleton were scanned by Altru Hospital Imaging Center, Grand Forks, North Dakota, using thin sectional (2mm) CT slices permitting high resolution 3D reconstruction of the skull capable of 360° spatial manipulation. This allowed superimposition of the skull upon Miller's photograph, with remarkable concordance of craniometric and cephalometric landmarks between the skull and photograph. A demonstration of the new superimposition technique is presented elsewhere in the program.

In conclusion, the identity of the alleged James-Younger gang member's skull could not be excluded from Miller's postmortem photograph based on a craniofacial superimposition. However, numerous factors must be evaluated in cases to establish personal identification. Although the craniofacial superimposition of Miller's postmortem photograph could have eliminated the skull as a possible match to Miller, the craniofacial superimposition suggests the skull could be that of Miller.

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