The Boy in the Iron Coffin

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Mitochondrial DNA (mtDNA) testing is often used in historical cases, due to its robustness and maternal inheritance. Because of the high copy number of mtDNA, this type of analysis can be often times more successful than nuclear DNA testing, especially when the biological samples are old and the DNA has degraded over time. Also, since mtDNA is inherited maternally, there can be a larger pool of potential living maternal relatives to use for comparison purposes. This particular historical case involved the discovery of an iron coffin dating back to the 1850s. Unearthed by a construction crew in 2005 in Northwest Washington, D.C, the coffin contained the well preserved remains of a teenage boy. During a two year investigation in conjunction with the Smithsonian Institution, Mitotyping Technologies helped to identify the remains by using mtDNA analysis to obtain a bone sample profile to be used for a subsequent comparison to a maternal relative. Although the remains were well preserved, regular primers sets (approximately 250 base pairs) did not yield any mtDNA results. Therefore, mini-primer sets (80-150 base pairs) were used to obtain results from the bone sample, and high quality sequence data were obtained. Obtaining this mtDNA profile had a significant role in the ultimate identification in this historical case.