ORIGINAL RESEARCH PAPER

SKELETAL REMAINS OF RAMÓN ROBERTO PÉRE: A VICTIM OF A DICTATORIAL REGIME IN URUGUAY

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ABSTRACT

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Introduction
Forensic anthropologists have developed numerous demographic techniques to understand the biology of people. Many of these techniques derived from skeletal remains of people with known identities or death certificates. But case studies are ideal to test the validity of this concern and forensic anthropological may function as a testing ground for this aspect of biological anthropology. (Iscan & Solla, 2000). Along with these changes, many internationally known cases have been studied in Latin America. Some of these include the identification of Joseph Mengele (Eckret & Teixeira, 1984; Curran, 1986; Helmer, 1987), 16th century explorer Francisco Pizarro (Maples, Gatiff, Ludena, Benfer, & Goza, 1989), Eugenio Berrios (Solla & Iscan, 2001), and investigation and identification of the human skeletal remains of the disappeared in Argentina (Snow et al, 1984) and Uruguay (Solla, Iscan, & McCabe, 2005; Solla, Iscan, & McCabe, 2010).

In the last two decades, forensic anthropology has been an active part of the coroner system in Uruguay (Solla, 1994a). The number of cases has increased considerably since the inclusion of a resident forensic anthropologist to the medico-legal team (Solla, 2005). This eventually led to a higher rate of positive identification of skeletal remains (Solla, 2015; Solla, 2016).

On September 6, 2010, several skeletal remain were exhumed from Hill Cemetery of Montevideo City and, after the preliminary observation the remains, were transported to the Judicial Morgue of Montevideo City for an in-depth analysis by the local pathologist and the resident forensic anthropologist, especially to determine the identity and cause of death. The skeletal remains were in an urn rather than a coffin because it is a tradition in Uruguay to exhume the remains of deceased relatives from the coffin and place them into an urn after two or three years. This work is done by cemetery workers, and, therefore, it is common that several bones are left in the coffin. In this case, missing bones included the hyoids, the right radio, the right ulna, all right wrist bones, all right hand bones, several right and left foot bones, 2 right ribs, 3 left ribs, 2 thoracic vertebrae (T8 and T11), and the right knee. Several dental pieces, numbers 12, 28, 34, 36, 46 (according to F.D.I. system), were missing ante-mortem, and dental piece number 45 was extracted post-mortem for a DNA analysis before the skeletal remains arrived to the Judicial Morgue. Further examinations revealed no evidence that the remains had been attacked or damaged by predators or scavenging animals. No insects were found and the remains had not been disturbed by any other agent. The first set of osteological analysis dealt with the determination of sex, race, age at death, and stature of the victim.

Diagnosis of sex was made using the entire skeleton but primarily the skull, pelvis and long bones using both morphological and metric features (Krogman & Iscan, 1986). As is typical for males, the skull was large and rugged with well-developed supraorbital ridges and mastoid processes. The occipital bone showed pronounced nuchal lines and protuberance, small frontal and parietal eminences, and a sloped forehead (Burns, 1999). The pelvis was also of a male type with a narrow subpubic angle, large acetabulum and narrow, deep greater sciatic notch (Burns, 1999). In addition to morphological analysis, determination of sex was made by discriminant function analysis of the skull and long bones using American white based formulae indicated the victim was male (Giles, 1970). Long bones provide probably the highest percentage of sex accuracy with a minimum number of metric features (Krogman & Iscan, 1986). As is typical for males, the skull was large and rugged with well-developed supraorbital ridges and mastoid processes. The occipital bone showed pronounced nuchal lines and protuberance, small frontal and parietal eminences, and a sloped forehead (Burns, 1999). The pelvis was also of a male type with a narrow subpubic angle, large acetabulum and narrow, deep greater sciatic notch (Burns, 1999). In addition to morphological analysis, determination of sex was made by discriminant function analysis of the skull and long bones using American white based formulae indicated the victim was male (Giles, 1970). Long bones provide probably the highest percentage of sex accuracy with a minimum number of dimensions. It has been the practical experience of the author that Steel's (1972) works based on the St. Bride skeletal series of historical English period have been fairly accurate for Uruguayan skeletons. Steel's formula obtained for the humerus, femur and tibia also determined the sex as male.
From a morphological point, the victim showed a number of white characteristics such as deep nasal depression, a narrow nasal aperture, sharp sills, and a round and high skull (Krogman & Iscan, 1986). Cranial and mandibular dimensions were put into discriminant function formulae derived from an American white sample (Giles & Elliot, 1962).

Stature estimation is another way to determine if the victim’s body size was within the range of the reported missing people and also to rule possibilities out if there are large discrepancies. There are very few standards to estimate height from the skeleton. The most reliable is obtained from the long bones of the lower and, to a lesser degree, of the upper extremities. The given standard error of estimate can cover a safety range around the mean. In this case the estimation of stature was made using lengths of the femur and tibia and applying them to Trotter’s (1970) regression equations for white males. The average stature was found to be 162 cm with about ± 4.0 cm standard error of estimate. Therefore, the range of possible heights was from 158 cm to 166 cm.

Age at death may be estimated from several methods (Iscan & Loth, 1989). One of the most reliable morphological age estimations is the assessment of the costochondral junction of the ribs (Iscan, Loth, & Wright, 1984). When applied to this case for a white male, it was observed that pit depth is increasing but the shape is still a narrow to moderately wide U. The walls are thinner, but the edges remain rounded. The rim is more irregular with no uniform scalloping pattern remaining. There is some decrease in the weight of the bone; however, the overall quality of the bone is still good. These characteristics indicated that this rib was of young male in phase four, which has a mean age of 29 years with a range from 26 to 32 years (Iscan, Loth & Wright, 1984). Ectocranial suture closure was one of the oldest techniques developed to estimate age at death. In this case the technique development by Meindl & Lovejoy (1985) for the vault indicated an age at death between 20 and 40 years old. A modification of the technique using a Uruguayan sample showed greater success over others (Solla, 1994b). It is calculated from the total score of each section of suture and applying it to the regression equation: Y = 0.950468x - 2.63467. In this case the total score was 33, which made the age about 29 years with a range of 28.5 ± 5 years. The total score was obtained using the traditional 0 (open) to 5 (closed) scale patterns and added up to a maximum score of 95 (Solla, 1994b). Evaluation of the male pubic symphys pattern was based on Todd’s (1920) studies, but it has been the experience of the author that Snow’s (1983) modification has worked better than both the original methods of McKern & Stewart (1957) and Todd (1920), as well as the new one by Suchey, Wisely, and Katz (1986). The total score of Snow’s regression equation provided a mean age of 28.39 years old. The study of the chronological metamorphosis of the auricular epiphysis of the ilium (Lovejoy, Meindl, Pryzbeck, & Menfor, 1985) indicated an age at death between 25 and 29 years corresponding with phase III of this technique. Age estimation was also made from the size of the medullary canal of the proximal epiphysis of the femur (Solla, Castellanos, & Toribio, 1989). Results indicated that the victim was about 30 years old with a range of 25 to 35 years using the formula Y = 58.08 +1.47x6-03, where x refers to the medullary canal size. This technique was derived from a Cuban sample of 94 males and females. The humerus was first sagitally sectioned in its upper third to locate the line farthest from the medullary cavity was advancing into the epiphysial region. The surgical neck of the bone is taken as a reference point. If the cavity has not reached this point, the metric value is negative, suggesting a young person. If the canal has advanced into the neck and even to the head, the person is in an older age category. However, it is very clear that the rib phase analysis, eotocranial suture closure pattern, pubic symphysial metamorphosis, chronological metamorphosis of the auricular surface of the ilium from the long cavity of the low suggested a lower range of 26 and gave an upper range of 32 years old at time of death. Therefore, a mean age of about 29 years was estimated for the remains.

The osteological analysis of the skeleton has shown that these were the remains of an approximately 29-year-old white male who was about 162 cm tall.

Interval Since Death
Determining the interval of time since death is one of the most difficult aspects of forensic assessment (Henssge, Knight, Krompecher, Madea, & Nokes, 1995). In general, the time interval since death is determined by analyzing the remains through external observation, chemical-physical testing, and estimating the deterioration time of artifacts like clothing, shoes, etc. External observation includes factors like temperature, scavenging by animals, and insect invasion (Easton & Smith, 1970; Rodriguez & Bass, 1983). The second method includes chronological dating techniques, including the presence of elements and compounds like nitrogen, amino acid and fats (Krogman & Iscan, 1986). The third technique deals with the assessment of deterioration of fabrica, plastics, nylon, and the like (Morse, 1983). The process of decomposition should proceed at a faster rate in cases which are not buried in a coffin, but this was not the situation for the present remains. In general, the decomposition process in Uruguay is slow and may take as long as 2 or 3 years, and later, the remains are exhumed from the coffin and placed into an urn. In this case the body was almost totally skeletonized; there was only little soft tissue in the left hand dissected by natural causes, and there was not any clothing to determine the rate of deterioration (Morse, 1983). Therefore, we determined the interval of time since death according to our forensic experience, the general aspect of the remains, a chemical-physical method and cemetery record-data. Bones showed good preservation and consistency, they were not crisps, and showed with little porosity. There were no adiopocere remains, and the medullar cavity of long bones was empty. These factors indicated that the skeletal remains had at least 20 years since death. The chemical-physical method of the test for carbonate was also used; this is when a piece of bone is exposed to a few drops of 20 percent hydrochloric acid and produce a foam, which indicates the presence of dolomite-petrification. Younger specimens show a weaker reaction to the hydrochloric acid, as in this case, which indicates a time since death of at least 30 years (Krogman & Iscan, 1986). The data of death according with the documentation provided by the Hill Cemetery’s records, this is July 6, 1973 fit with the nameplate data on the urn. Based on the evaluation of these facts, it was estimated that death might have occurred in the date showed in the nameplate on the urn, this is more than 37 years ago on June 7, 1973, because we could not find any contradiction between skeletal examination and data submitted by relatives and Hill Cemetery authorities.

Cause of Death
At the Judicial Morgue of Montevideo City, the skeletal remains were taken out from the urn and put on the autopsy table. It was immediately obvious that the skull did not show any trauma and was in good stage of preservation. In general, all the bones were in good stage of preservation. But a detailed examination showed gunshot trauma on the superior surface of the 12th thoracic vertebrae without any sign of reparaiton, indicating that it was an antemortem or perimortem wound. Indeed, it seems to be one bullet entrance, just to the right lateral superior surface of the center of vertebrae body (Fig.1). Other broken areas included part of the right frontal body of this vertebrae, showing the typical radial lines produced by a gunshot (Fig.2). The beveling pattern of gunshot wounds is one of the best indicators of the direction of a bullet (Quatrehomen & Iscan, 1997). Gunshot trauma on the superior surface of the 12th thoracic vertebrae without any sign of reparaiton, indicating that it was an antemortem or perimortem wound. Indeed, it seems to be one bullet entrance, just to the right lateral superior surface of the center of vertebrae body (Fig.1). Other broken areas included part of the right frontal body of this vertebrae, showing the typical radial lines produced by a gunshot (Fig.2). The beveling pattern of gunshot wounds is one of the best indicators of the direction of a bullet (Quatrehomen & Iscan, 1997). Examination of the beveling and fractures suggested that this hole was entrance and exit wounds made by only one bullet. The frontal region of the 12th vertebrae also showed a massive fracture with lineal traces with external beveling which indicated that this was the exit for the bullet. The conclusion reached was that the victim was killed with only one bullet of little caliber; it seems to be a 0.22 bullet (Quatrehomen & Iscan, 1997), that entered from his back, Shattering the 12th thoracic vertebrae and exiting through his chest, causing severe injuries that caused his death almost instantly. The rest of the skeletal remains showed no discernable antemortem health problems. Dental health was also good, and the teeth well cared for, suggesting a person with an average socioeconomic status.
Identification

One of the most challenging aspects of the forensic sciences is the identification of the victim from the remains. As long as the osteological characteristics do not exclude the victim, factors of individualization are needed to make a positive identification (Krogman & Iscan, 1986). The aim of individualization is to make sure that the victim can only match one individual. We made a complete forensic anthropological report on age, sex, race, stature, cause of death, and time since death in September 2010. As the analysis of the skeletal remains showed, the victim was a white male, about 29 years old and 162 cm tall, who was murdered by one gunshot of .22 caliber in his back more than 30 years ago. For positive identification, a number of procedures were put together to make it. These included skeletal characteristics, digital skull-photo superimposition, and dental evidence. It was suspected that skeletal remains might have belonged to Ramón Roberto Peré, who was 30 years old and 162 cm tall. Upon the suspicion that the victim was Ramón Roberto Peré, it was decided that positive identification could be made by comparing the skull with a good quality picture by superimposition technique. This technique has been a commonly used procedure to assist in identification and has been accepted in the courts of a number of countries (Glaister & Brash, 1937; Basauri, 1967; Helmer, 1987; Soto & Barcos, 1989; Ivanov & Abramov, 1995; Ubelaker, 1996; Solla & Iscan, 2001; Patino, 2004; Solla, 2005; Humpire, Solla, & Zarate, 2010; Solla, Iscan & McB Cabe, 2010; Solla, Iscan, & McCabe, 2013). This may be done according with the classic method (Glaister and Brash, 1937, Chandra Sekharan, 1971; Colonna, Pesce, & Introna, 1980; Koelemeyer, 1982; Hagemeyer, 1983; McKenna, Jablonski & Fearnhead, 1984; Bastian, Dalitz, & Woodward, 1986; Iten, 1987; Helmer, Schwemmberger, 1989; Lan & Cai, 1993; Seta & Yoshido, 1993). Computer aided superimposition is also being pursued by other forensic experts. The use of computer has a number of advantages as well, one of which is that the whole process can be accomplished by one person, and there is also less equipment and requires careful assessment of both skeletal remains and personal belongings. If possible, additional techniques should be incorporated in the final decision. As was done in this study, dental comparison and DNA analysis added further assurance that the deceased person was Ramón Roberto Peré. The investigation started with the initial observation about sex, age, race and stature, cause of death and time since death. These techniques seemed to have worked well in this case. It was confirmed that the remains belong to a healthy white man who was about 30 years old and 162 cm tall. It was estimated that the time of death was about more than 37 years ago before the remains were exhumed, in September 2010 and carried out to the Judicial Morgue to be analyzed. The victim was murdered with a .22 caliber bullet that entered his back, destroyed the body of vertebrae number 12, and exited through his chest in an ascending way to damage the heart and caused his death suddenly. To obtain a positive identification, skull-photo digital comparison techniques were designed for the case. The superimposition techniques as a means of identification has a long history (Grüner, 1993; Solla, 1999). Digital and video superimposition has proven to be very successful in the investigations of identities. Many identifications made this way were accepted by the courts around the world as was in this case. With the availability of current technology, the whole process takes about one hour and demonstrates effectively consistencies between the skull and the facial photograph of the victim. However, success in identification depends on the quality of the submitted photograph, as well as correct orientation and articulation of the skull and mandible. Although the remains were identified by skull-photo digital comparison, all available evidence should also be incorporated as dental congenital absence of lateral superior incisors was later found to be in agreement with the identification based on digital skull-photo superimposition and DNA analysis. In conclusion, this study shows that a positive identification can be made using the combination of the classic methods, modern dental and cranial techniques and digital skull-photo comparison technique. It is, therefore, highly recommended that coroners and law enforcement agents obtain anthropological opinions when they are dealing with remains extensively decomposed or skeletonized to analyze and eventually identify them.

References
