H89 Forensic Age Estimation of Living Individuals: A Retrospective Case Analysis

Antonio De Donno, PhD, and Valeria Santoro, PhD, Section of Legal Medicine - DiMIMP, P.zza Giulio Cesare n.11, Bari, 70124, ITALY; Carlo P. Campobasso, PhD, University of Molise, via De Sanctis, snc, Campobasso, 86100, ITALY; Nunzio Di Nunno, PhD, via Guido Dorso 9, Bari, 70125, ITALY; and Francesco Introna, PhD, Section of Legal Medicine - DiMIMP, P.zza Giulio Cesare n.11, Bari, 70124, ITALY*

The goal of this presentation is to demonstrate that it is necessary to standardize the methods used in the age estimation of living subjects, and that prudence is also necessary in the approach to age determination.

This presentation will impact the forensic community by demonstrating the necessity of formal training in this area.

Age estimation of living individuals undergoing criminal proceedings or requesting asylum is one of the most difficult problems in forensic medicine. It is a prerequisite for personal identification and it is increasingly important in criminal matters. In fact, if doubts arise regarding the age of a person suspected of a crime, forensic age estimation is promptly requested by authorities to ascertain whether the person concerned has reached the age of imputability (criminal responsibility). On the other hand, if an asylum seeker is a minor, his request must be granted.

In Italy, the age limit for which a person is considered to have legal responsibility is 14 years, and the age to determine if an individual should be tried under juvenile delinquency laws or general criminal laws is 18 years.

Particularly between the ages of 14 and 18 years, juvenile delinquency laws in Italy may be applied and it is possible for children to be incarcerated in juvenile detention centers if their responsibility for a crime is determined. The need for accurate techniques of age estimation has never been greater than it has been in the last two decades due to the increase in international migration. Most young immigrants have no valid proof of their date of birth (legal age) upon arrival in this country. They usually lack valid identification documents and often provide an incorrect age.

This study is a retrospective review of a sample of 53 immigrants (32 males and 11 females) coming from two geographic areas which are centers of important world conflicts: the Balkan Peninsula (Slovenia, Belgrade, Zagreb, Albania) and the Middle East (Palestine, Lebanon, Iraq, Egypt).

In these particular cases, forensic age estimation was requested of the Department of Legal Medicine at the University of Bari by local authorities in order to either ascertain criminal responsibility, provide temporary shelter, and/or diplomatic asylum. The period in question is from May 1989 through September 2007.

The age estimation process began with a clinical examination of the individuals which consisted of recording the stature and weight of the individual, along with a description of his or her secondary sex characteristics, such as the presence of pubic and underarm hair, the development of the external genitalia, and breast development. With the aim of making an age estimate as precise as possible, ortopantomographs, and x-rays of the left hand and wrist on almost every subject were carried out in order to evaluate skeletal and dental age. In 23 cases, pelvic x-rays were taken, and in a few other cases supplementary examinations were performed (vertebral x-rays, knee x- rays, and shoulder x-rays).

In the retrospective analysis of a sample of 53 subjects, 22 of these demonstrated a possible correspondence between the declared age and the biological age obtained through evaluation by the specialists. However, there was no correspondence for the other cases. In 11 cases the declared age was less than or equal to 14 years, and only 5 of these
11 cases were confirmed by radiographic examination (OPG and hand/wrist X-rays).

Similarly, there were only 27 cases in which the declared age and biological age corresponded. Another interesting finding was the correspondence between the results obtained from the analysis of the x- rays of the left hand and wrist and the results obtained by the analysis of the ortopantomographs in almost all subjects. Statistical analysis was performed and the results showed a significant statistical difference between declared age and the assessed biological age ($p<0.001$); whereas, no statistically significant differences were found between the assessed skeletal and dental ages ($p=0.431$).

It is necessary to standardize the methods used in the age estimation of living subjects, and that prudence is also necessary in the approach to age determination. Very few physicians are skilled in forensic age estimation procedures either because they have no formal training in this area or, when they do have training, they do not perform these procedures often enough to keep up to date. In order to correctly estimate age in living subjects, the margin of error associated with the forensic methods adopted must be taken into consideration.

Age Estimation, Personal Identification, Retrospective Analysis

 ** Presenting Author*