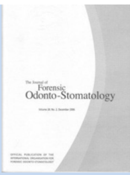

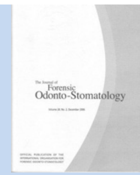

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Ethics in Age Estimation of Unaccompanied Minors.

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ABSTRACT
Children absconding from countries of conflict and war are often not able to document their age. When an age is given, it is frequently untraceable or poorly documented and therefore questioned by immigration authorities. Consequently many countries perform age estimations on these children. Provision of ethical practice during the age estimation investigation of unaccompanied minors is considered from different angles: (1) The UN convention on children's rights, formulating specific rights, protection, support, healthcare and education for unaccompanied minors. (2) Since most age estimation investigations are based on medical examination, the four basic principles of biomedical ethics, namely autonomy, beneficence, non-malevolence, justice. (3) The use of medicine for non treatment purposes. (4) How age estimates with highest accuracy in age prediction can be obtained. Ethical practice in age estimation of unaccompanied minors is achieved when different but related aspects are searched, evaluated, weighted in importance and subsequently combined. However this is not always feasible and unanswered questions remain.

***KEYWORDS*:** Ethics, unaccompanied minor, children's rights, medical ethics.

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INTRODUCTION

Ethics are the rules of conduct recognized in particular professions or areas of human life.[1] The term is applied to conduct and behaviour in human interactions and to a philosophy concerning what is right/ correct and what is wrong/incorrect. It can also involve an evaluation between good and bad. In many cases this difference is clear, but in most instances there are borderline issues leaving the question: What can be accepted? Ethical views change over time and may also vary in different cultures and traditions. In the case of age estimation of unaccompanied minors there are no clear cut borders of what ought or ought not to be done and this raises the questions about behaviour, decision-making, values, rights and responsibilities.

In the past 5 to10 years there has been an increase in migrants to EU and other western countries from regions struggling with poverty, famine, war and natural disasters. Some of these are children travelling on their own. In 2011 some 12 230 unaccompanied minors applied for asylum, 1500 more than in 2010. Sweden (2 655) and Germany (2 125) received the largest number of minors.[2] The European migration network (EMN)[3] and the United Nation's Refugee Agency (UNHCR)[4] report a growing number of unaccompanied minors seeking asylum in Belgium (Table 1). There is also a tendency for younger children to apply for asylum. Under the EU directive, "unaccompanied minors" refers to third country national or stateless persons below the age of 18 who arrive in the territory of the member states unaccompanied by an adult responsible for them whether by law or custom, and for as long as they are not effectively taken into the care of such person, or minors who are left unaccompanied after they have entered the territory of the member states[3]. Member states may in addition have different national legislation as to legal age and age of responsibility.

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different national legislation as to legal age and age of responsibility.

Country origin	**Age estimation result**		**Total**
	< 18year	**> 18 year**	
Afghanistan	23	112	135
Guinea	5	58	63
Algeria	5	22	27
Iraq	8	18	26
Congo (DRC/RC)	1	12	13
Morocco	4	8	12
Ghana		11	11
Angola	1	7	8
Cameroon		7	7
Pakistan	2	5	7
Total	49	260	309

Table1: Number and nationality of unaccompanied minors examined on age in Belgium during 2010

A report from European Migration Net lists the reasons for unaccompanied minors entering the EU as persecution and seeking protection, family unification, economic and aspirational reasons, joining migrant or diaspora communities, transit to other member states, victims of trafficking and smuggling, medical reasons, abandonment and “runaway and drifter”.[3]

An updated and extensive list of the international legislation for handling refugees and children has been published by the Immigration Law Practitioners’ Association.[5] Among them are Universal Declaration of Human Rights (1948),[6] United Nations Convention Relating to the Status of Refugees (1951),[7] United Nations Convention on Children’s rights (1989).[8] The Dublin Regulations (2003)[9] state that

the asylum application should be treated in the first EU country they enter or in the EU country where the parents reside. EU has many other directives and is especially concerned about human trafficking of children.[10] In addition there are national legislations which vary according to local needs and demands.

The unaccompanied minors are a vulnerable group who need protection and therefore special provisions are made.[11,12] According to the EU – Reception Condition Directive, member states have to ensure representation of the unaccompanied minor by appointing a legal guardian or person or body which is responsible for the care and well being of the minor. When no relatives are found in a member state, the child is applying for asylum in her/his own right. The guardian must safeguard the child's well being. Children have the fundamental right to health care and education.

A few criminal offenders claim to be under the legal age and some children have been subjected to criminal offences like smuggling, trafficking and sexual exploitation (this applies both to boys and girls). The legal age for marriage varies from one country to another, but in some cases of forced marriages, the age given is higher than the real age. In junior sports which are graded according to age groups, it is suspected that some participants are older than allowed and gain from body strength and have physical advantages over their peers. There are also under-aged athletes competing particularly in sports in which late maturers may be at an advantage e.g. gymnastics.[13]

Because children have special rights, some immigrant children present with a doubtful or false age to try to gain from these benefits. To prevent abuse of the system and to protect the children many countries have introduced age estimation procedures in cases where the given age is questioned. This is to avoid a generalised examination of all migrating young unaccompanied fugitives.

Age estimations may be defined as examinations to detect chronological ages when the children's ages are unknown because the births may never have been registered or they arrive without being able to document their age. In many western countries chronological age regulates the right to schooling and education, legal responsibility, being allowed to drive a car, taking part in elections and for adults the right to draw a pension.

Examination methods for age estimation may be performed as either a so-called “holistic approach”[14] or purely based on medical and dental findings or a combination of these. There is, however, no method that can determine the age of a child. The biological variation in growth and maturity must always be considered. The nearest one can get is an age estimate.

The non-medical methods may look at the credibility of papers and documentation. The story the child tells, information supplied in interviews and background knowledge. It is often a caseworker who will question the given age and request an age estimation. This may be supplied by examination of physical appearance, sexual maturation and observation of the child’s behaviour,[15] but excluding all evidence which may be obtained by radiology.[16] This is most commonly performed by specially trained staff. The given age estimation, will always be subjective.

Age estimations based on medical examination include

Bone maturity which is observed on radiographs as the development and fusion of the long bone growth-centres (e.g. in the hand and wrists).[17]

Physical development includes measuring height and weight and after the onset of puberty also grading the developments of sexual characteristics.[18,19]

Dental age estimation includes grading tooth development both clinically and on dental radiographs.[20]

Much research has been carried out on both the medical and dental age estimation methods and this is still an ongoing process with advance imaging technology and statistical interpretation.[21,22] It is well known that children develop and mature at different rates – some mature early and others late. Intrinsically each body part matures differently and external factors may influence this maturation.

The parties involved in the age estimation process are obviously the children themselves and the contracting authority; this may be the immigration authorities, reception centres, child welfare centres, the courts or police who want an estimate of the age of criminal offenders or people picked up in the country without proper identity documents. The examiners may be either non-medical workers such as case worker or (specialized) medical staff. A part of the case worker’s task consists of

finding age related evidence, such as: available identification documents, the age declaration by the applicant, the information accessed during interviews with the applicant and information obtained from the country where the applicant originates[23]. The society is also involved in the age estimation process as it provides the legal framework by national jurisdiction and regulations and international conventions as already mentioned. The human rights declaration states a person's right to freedom of religion, and processes which are contradictory to religious practice, have to be respected. In age estimation this issue is most commonly between female applicants and male doctors.

AIMS, MATERIALS AND METHODS

The aim in this article is to present ethically acceptable practices during the age estimation examinations and procedures in young unaccompanied minors. Therefore specific characteristics of the age estimation investigation are evaluated and framed in the context of diverse but connected aspects such as (1) the legal implications of the UN convention of Children's Rights,[8] (2) because age estimations are the result of medical examination(s): the four principles of biomedical ethics,[24] namely autonomy, non-malevolence (non-maleficence), beneficence and justice, (3) the relation to medical examinations applied for non-treatment purposes. Key aspects of these three generally accepted principles are collected and discussed in the context of age estimation. Furthermore the age estimation results are estimates and accordingly (4) the conditions to obtain the most accurate age estimation methodology is reviewed.

UN CONVENTION OF CHILDREN'S RIGHTS.

The UN convention of Children's Rights states that children have the right to protection.[8] In the EU convention each child should be appointed a guardian who looks after the child's interests. From time to time the guardian or case worker intervenes in the age estimation process. Rightly, the guardian's job is to secure that the applicant is fairly treated and not subject to systemic or personal errors. A child has the right to healthcare which should be provided during the application process which is necessary to get an official status. From 2009 to 2011 age estimation was carried out on 1394 minor asylum applicants in Norway. Only 2% reported medical problems, but more than

50 % of the children were in need of dental treatment. Some had large abscesses and needed urgent dental treatment. A child also has the right to education[25] and language tuition is often provided during the process. This is part of the integration procedure.

The child has the right to know**.** Most of the children seeking asylum maintain they are between 16 and 18 years. They are old enough to be able to express themselves and special attention should be paid to language and communication**.** This is difficult when there is no common language or concept of words. Cultural and religious differences may be huge.[26]

In Norway from 2009-2011 more than 80% of the unaccompanied minors were older than 18 years. The legislation in Norway has changed so that children younger than 16 years are allowed to stay permanently, but those between 16 and 18 years are returned to their home country when they reach 18 years. Since this regulation was introduced in 2009, children applying for asylum are younger. It is however important that the children know the consequences of the results – which in many cases imply that they will be treated as adults.

BIOMEDICAL ETHICS

Most age estimations in living children and sub-adults are based on medical examinations and medical knowledge. Therefore the basic ethical values of biomedics[24] need to be respected during age estimation examinations in living individuals. These values were described as autonomy, non-malevolence, beneficence and justice.

Autonomy

Every human being has the right to physical integrity and protection of privacy[27] and can accept or refuse medical investigation or treatment. As a consequence a medical examiner needs permission from the patients themselves, to perform a medical investigation or treatment. Minors have the same rights, but they are regarded as being incompetent to decide for themselves. This implies that a medical examiner needs permission from one of the parents to do a clinical investigation or carry out treatment. However, mentally mature youngsters are considered as adults (mentally grownups) and may give permission for examination or treatment when the parents refuse, or they may give permission without the parents' knowledge.[28] In these cases the child gives her/his consent to treatment.

Classifying unaccompanied minors as mentally mature needs specific examinations performed by specialised investigators in a standardized way. During the whole age estimation process related to unaccompanied minors, the applicant has to be considered and treated as a child. Due to their status, the responsibility of the parents is taken by the appointed guardian. Therefore, from an ethical point of view, being a mentally mature youngster should not be taken into consideration when deciding who can give permission to accept the proposed investigation. This permission should always be given by the guardian in full agreement with the applicant and her /his guardian. Because the guardian gives the permission, consent to carry out the investigation is given. The examined unaccompanied minor also has to be informed about the fact that the medical examiner is working for a third party (national authorities) implying that a normal relationship between patient and medical-examiner does not exist. The identity of the instructing authority and the purpose of the assessment have to be provided and explained to the applicant. In all circumstances, the applicant has to be informed about all steps in the age estimation procedure, the reasons why these steps are used and the consequences of the results of each step. Medical patients have the right to express complaints during medical treatment and this also applies during age estimation examinations. The child or guardian must be informed about this and has to receive information about the complaint procedure. This information has to be given in a manner and language understandable by the applicant, which would normally be in the applicants' native language,[29] and is preferably orally explained and written out in a provided brochure. An interpreter has to translate all information and the whole communication between all the participants present. In addition the information must be provided in a manner taking into account the assumed age, previous knowledge, the education level and the socio-economic background of the applicant.[30] To optimise these conditions in practice the information session should be an open discussion between the examiner, the applicant, the guardian and/or the lawyer of the applicant, correctly translated in two directions by the interpreter. The medical examiner has to monitor that an informed consent is given in full agreement between the applicant and her/his guardian (and/or lawyer) and that the applicant has fully understood the information provided. At best the informed consent is written and

signed by the guardian. To express the informed consent of the applicant her/his signature can be added. Refusing the age estimation investigation without acceptable reason (e.g. pregnancy) has no advantages for the applicant. Indeed, age estimations based on medical criteria are the most accurate among all age estimation method. Avoiding medical age estimations increases the risk of obtaining a wrong estimation of age. Refusal is reported to the decision making authorities and although the refusal should not prejudice the final decision, in practice it is interpreted as being not in the applicants best interests in many countries.

Non-malevolence

No harm, other than necessary for optimal recovery, should be done to patients during diagnosis, treatment or healing. Physical harm can be done to applicants for age assessment using ionizing diagnostic tools.[31] The degree of dental and skeletal maturation observed on radiographs is the basis for the most commonly used age estimation methods, because it allows investigators to observe the age related variables which provide most accurate age predictions. Therefore panoramic (dental) and hand-wrist and/or sterno-clavicular (medical) radiographs are evaluated. The radiation doses (and the exposure time) used during these radiographic examinations together with the radio sensitivity of the evaluated body part are indicative of the possible physical harm done to the examined individual. The effective radiation dose takes into account the biological consequences of radiation, in particular the relative sensitivity of the different exposed tissues. It allows one to estimate the risk and compare the dose from ionizing radiation to other radiation sources. The scientific unit used to express the effective dose is Sievert (Sv). The dose used in the radiographic examination of an applicant for age estimation may be compared to natural background to evaluated the harm.[32] On average every person receives yearly between 2000 and 2500 μSv natural background radiation (5μSv/day). This means that the doses needed for panoramic (5-30μSv), hand-wrist (4μSv) and sterno-clavicular (20μSv) imaging together correspond to the dose one receives from natural surroundings in 10 days. Placed in the context of the travelling history of unaccompanied minors, it has to be noted that airplane travel exposes the passengers to additional cosmic radiation (e.g. flight Cameroon-Belgium 26.65μSv). This implies that unaccompanied minors often receive more,

or equal, radiation during the flight from their home country to the country of refuge or shelter than they do during the radiological examinations for age estimation. At present non ionising alternatives which allow for observing age related variables, are non-existent, not fully developed or not verified. Ultrasound can under restricted conditions be used to observe certain skeletal age predictors.[33,34] Magnetic resonance imaging (MRI) can be used to evaluate the ossification of hand-wrist bones and clavicles, but the techniques are not validated.[35] For dental age examinations the technique is still at an experimental stage. The general disadvantages of MRI are: few numbers of available units and their constant use in medical diagnosis, the time-consuming procedure (at least 4 minutes per field of interest), the claustrophobic examination circumstances and the extreme expense of each examination.

An additional effect of the radiological examinations, certainly panoramic radiographs, is that underlying pathologies may possibly be detected. When the applicant is provided with such findings, necessary treatment can be initiated. Since additional medical findings observed during age estimation are covered by the medical confidentiality, such information should not be included in the age estimation report. Therefore the applicant should be informed about the clinical and/or radiological findings and the X-rays made available, or the doctor or dentist responsible for treatment is given permission to obtain and evaluate this information.

Psychological harm could be done to unaccompanied minors during certain physical body and sexual maturity examinations. Certain examinations on naked applicants and the use of “measuring tools” can be dishonouring. Unaccompanied minors are vulnerable to psychological harm due to the fact that they are totally dependent on their own resources or on resources provided by the host country. This vulnerability is enforced when histories are told of torture, imprisonment, war, murder of family members, extreme circumstances during migration, interrupted social relations and detention. Therefore interviews organized to detect the mental age of unaccompanied minors should be performed in such a manner that the life experiences of the unaccompanied minors are discovered and taken into account during the age estimation interviews. It should be performed by psychological professionals, building trust and taking time to achieve a

correct and non traumatizing approach. Since decisions on the ages of the unaccompanied minors are ideally made shortly after arrival in the host country in the interest of all parties, this does not generally allow the mental age of an individual to be evaluated properly. In addition such age estimation approaches need reliable scientific background which enables standards to be established providing equal estimates and related uncertainties to all applicants. As described earlier, minors are often mentally mature, implying that age estimations based on mental maturity will often overestimate age (classifying minors as mature). There is little evidence and research so far carried out on this age estimation procedure.

Beneficence

Actions should be taken to serve the "best interest" of the patient during the medical diagnostic procedures, treatment, healing and follow up. In relation to age estimation examinations the "best interest" of the applicant is served when proof of her/his age is given. Misclassification of the applicant is not only harmful for the individual, but the whole group into which someone is wrongly appointed is affected. During most of their status regulating procedures and before the final decision is put into practice the applicants are living together.[36] As such no benefit is given to a wrongly classified child that has to live together with adults, or to wrongly classified mature people who want to receive protection and will be treated as children. On the other hand the dynamics of a group of children with a misclassified adult included, or the group of adults with a wrongly classified child is disturbed. One of the major ethical issues must be to avoid misclassification – this applies both when children are estimated to be adults and when adults are estimate still to be children. There need to be a constant awareness that children should be protected from exploitation, human trafficking and other related offences where children are especially vulnerable.

The age estimation has to include the uncertainty of the prediction. The lowest limit of the predicted age should give the optimal benefit of the doubt to the examined applicant. The uncertainty of the prediction gives the parameters in which the final decision can be made. As described above, another benefit for the applicant may be the radiological findings, and diagnoses which are made available to the applicant, allow medical treatment to be initiated.

Justice

Justice may be defined in different ways.[37] Firstly, it concerns the fair distribution of risks and benefits. This implies that the possible physical risk related to the consequences of the ionising techniques has to balance the main benefit, namely better living conditions. The contrast between the two parameters is so extreme that the negligible harm, necessary for approval, melts away related to the better living conditions. Secondly, justice covers equal treatment of all applicants during the entire age estimation procedure. Therefore no objection can be made against the applicant being accompanied by her/his guardian and/or lawyer in all steps of the age assessment. The physical integrity, socio economic background and religion of the applicant should be respected. Is it in this context appropriate that female applicants are examined by a male investigator, and that sometimes applicants are asked to take of their head covering although their religion restricts such practices? Many countries adapt the principle that the child should always have the benefit of the doubt.[4] It has been observed that each profession involved applies the principle of "benefit of doubt" in each step of the evaluation, resulting in multiple "benefits of the doubt". This gives neither the correct age nor the ethical correctness expressed in the concept of "benefit of the doubt". Justice is not served when "benefits of the doubt" are integrated in the age estimation procedures. In each part of the age estimation procedure any possible given benefit of the doubt is case specific, implying that the impact on the age estimation result is different for each applicant.

Thirdly, justice is done to all parties involved if proof of the age of the applicant can be provided. Consequently the applicant has nothing to fear if she/he has indeed an age of minority. The proof allows the authorities to provide a legally correct decision. Legally correct decisions do not require the basic information of the estimated age of the applicant, but the ability to discriminate between minor or major (child or adult). The threshold is legally regulated on a national level and in some instances is also gender specific. In certain countries other age thresholds may be of importance for additional decision making. Classification of the applicant above or under a set age threshold is commonly used. The most important question left in this context is: What level of likelihood has to be reached during this classification? Setting this level is more a legal decision than an ethical issue. The

range of choice lies between 50,1% and the scientifically highest achievable certainty. It may be that different age related variables can provide the desired probability when either combined or separated for each age predictor. In the latter situation different estimators can be used to confirm the finding of a (chosen) principal predictor, or each predictor can deliver separately a weighted value. Under these conditions the estimated age of the applicant is of secondary importance and only needed when the applicants who were classified as children, become adults. Estimated ages cannot provide exact dates of births to applicants, but at the moment adulthood is reached the accuracy of the estimates is much less important and less consequential than when deciding whether an applicant is still a child or already an adult. Indeed the host country will have to provide the applicant with longer protection as a child when applying the "benefit of the doubt" at the moment adulthood is reached.

MEDICINE FOR NON TREATMENT PURPOSES

Certain medical examiners refuse to perform age estimation examinations because medical knowledge and medical diagnostic tools are being used neither for the purpose of treatment nor for improving or maintaining health. Medical applications are daily administered for other reasons in a lot of fields. Commonly accepted examples include: medical examinations for detection of alcohol and drug intoxication or abuse, surgery and medical treatment for aesthetic reasons, medical procedures in euthanasia, medical assistance to improve sports performance, medical tools applied to execute death penalties, medical treatments during research experiments[38] and DNA sampling to prove contact with a victim. In addition medical examinations are often carried out on behalf of a third party to evaluate the medical status of an individual e.g. for insurance purposes and as such, is not performed to serve the healing purposes of medicine. Age estimation procedures can be classified in this group of medical applications for non treatment or healing purposes. Most of these applications are commonly recognized by the communities involved. Moreover age estimation examinations may indirectly serve to improve health conditions of all accepted as children. Indeed, the purpose of age estimation examinations is to help applicants to get better living conditions, and in particular better access to healthcare and consequently better health prospects.

Is it the combination of undergoing a medical investigation for non treatment or healing purposes and an examination carried out on behalf of a third party, that provides the examined individual the name of applicant instead of patient?

AGE ESTIMATION METHODS

To evaluated the ethical issues of the age estimation method(ology) it has to be considered whether the chosen method(s) are based on ethical research and applied in a uniform way. Research may be considered ethical if based on ethically approved sampling followed by reliable and reproducible data collection. Correct sampling implies that the number of included subjects is representative to draw conclusions. The sampled individuals are selected randomly, but stratified on a homogenous distribution in age and gender. The choice of variables depends on their age related outcome and their ability to be uniformly observed and registered. The data collection is standardized and tested upon high intra- and inter observer reliability. A correct bio-statistical evaluation and modelling of the collected data is required to relate to clinical interpretation of the study results. The developed method must be verified on a test sample (dataset).

For equal treatment of all unaccompanied minors the applied age estimation method needs a uniform and totally reproducible approach on national and international level.[39] Currently this is not the case due to differences in chosen protocols and national regulations combined with a lack of international consensus. Therefore the scientific best age estimation method may be the only option for a uniform and optimal ethical age estimation practice. The best age estimation method provides the smallest difference between estimated and chronological age. Few reviews and no systematic reviews of age estimation studies are performed and therefore the search for the best age estimation method mainly depends on the expertise of the examiner. Currently best age estimation methods use age related variables observed using ionizing diagnostic tools (i.e. dental and skeletal maturation). Combinations of age related variables (and related age estimation methods) (probably) provide more information about age and should be considered. The mutual weight of the different age related variables used, should preferably statistically be modelled. Therefore reference samples (databases) should be available which include age information of all required variables, registered for each of subjects at the same

moment. At present this is not established and the case is weighted from different variables depending on the interpretation of the expert. Because the chronological age is estimated, the age is reported together with the related measure of uncertainty. A likelihood of the examined applicant being older or younger than the age threshold(s) of interest completes the age estimation result. The case closing procedures start with a report which gives the results from the age estimation examination. The report must be written in non-scientific language which can easily be understood by the decision maker(s). It contains all relevant facts of the age estimation examination, the registered age related values, the scientific references used and the age estimation outcomes. It is the task of the experts to express their opinion about the estimated age (plus related measure of uncertainty). When different variables are used, their expertise allows for interpretation of the results, correctly related to the likelihood of having passed a specific age.

In addition the costs of the expert's examination and report should be included. This makes all involved parties aware of the fact that the age estimation procedure is an expense in the host country. Moreover it emphasises the fact that the age estimation was commissioned and performed independently. The overall costs of the age estimation examinations has to be compared to the costs incurred by applicants if age estimations were not performed, with consequent incorrect categorisation of the applicant. The age estimation report is handled by a caseworker who understands the scientific background of the performed age estimation. The national regulations should be implemented and the international conventions adhered to. The final task will be to inform the minor of the results.

The consequences of the age investigation are that the applicant will be treated either as an adult or will receive a protected status as a child. In both cases a possibility for appeal against the decision, based on a defended age estimation must be possible. In this context the transparency of the age estimation examination and report should enable other experts to reproduce all performed examinations, to check the results and to evaluate the clinical interpretations. Especially for the last aspect all "benefits of the doubt" given to the applicant need to be reported in detail. Whatever the resulting consequences are for the applicant, an integration into the country of refuge or a reintegration to the country of origin will be essential.

Therefore ethically correct (re)integration programmes have to be set up by the country performing the age estimations. This (re)integration starts at the moment the age estimation procedure begins by means of the available health care[40] and education facilities.

DISCUSSION

Children have the right to know, implying that they also have the right not to know.[41] The purpose of the age estimation examinations is to estimate the age of the applicants so that they can be treated as juvenile or adult. If other information is discovered and the applicant doesn't want to know (e.g. proof about wrongly assumed sisters or brothers) it should be respected. In practice it is feasible not to provide the applicant information regarding the estimated age, but the information about being juvenile or adult will become clear due to the subsequent steps in the procedure. The applicant should receive information about the right (not) to know and his/her will recorded in the informed consent.

The right to know can also apply to additional medical information discovered during the age estimation investigations. This information can ranged from being of no consequence to life threatening for the applicant. Can the medical examiner provide this additional information to the applicant? In the circumstance when serious medical conditions are observed and the applicant has expressed the will not to know, the medical examiner is confronted with a serious dilemma. How should it be handled? At the moment of the observations the applicant is still considered as a child. Can the observed information be given to the applicants guardian?

In the situation where additional medical information obtained is a factor influencing the age prediction, the transparency of the report requires that, at least, the fact that a medical issue affecting the age predictions was observed. Is reporting this finding against medical confidentiality?

The term "best interest" encompasses diverse issues regarding the well being and safety of the unaccompanied minor, which is a priority. The task of the caseworkers is to assess those aspects which are in the best interest of the child. Justice requires equal treatment of all applicants. Does equal treatment imply identical treatment to all applicants or treatment in proportion to the specific needs, the efforts made, or the degree of suffering experienced?

Medical age estimation is based on age related medical features observed in the applicant. These observations contain and register specific information of the applicant's medical history and are the basis for medical tests. In medical practice this information is kept in the patient's record. At the time of age examination the current situation of the unaccompanied minor may preclude access to previous medical records. Moreover if medical information is obtained by the commissioning third party and this influences the future status of the unaccompanied minor, appeal against this decision must be possible. Such medical information should not be disclosed to a third party but may be disclosed to the applicant. Remaining questions are: Who keeps the obtained medical information? Where and how is it stored? Who has authority to access it?

CONCLUSION

Ethically acceptable age estimations of unaccompanied minors are obtained, when ethics are applied in each step of the procedure and in all related issues. The individual aspects need to be evaluated and debated so as to assess their importance in the procedure. The aim is to find a consensus of all involved parties. It was found that in each step of the age estimation procedure space for discussion was left. There is a need for further discussions in order to obtain a protocol for uniform ethically acceptable age estimation procedures.

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