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Indiscriminate disposal of museum specimens – a case report

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Abstract

The human body and its parts and organs are invariably used in medical teaching institutions for academic purposes. Legal provisions for the preservation of such specimens are made in anatomy Acts across the country. However, after they have been used, the specimens are not disposed of in a proper manner. This is a public menace and forces the authorities concerned to carry out unnecessary investigations. We report a case in which the bodies of two foetuses that were brought for medico-legal autopsy were later found to be formalin-preserved "museum specimens" that had been used for anatomical study. We wish to emphasise the need for guidelines for the proper disposal of anatomical museum specimens.

Introduction

Understanding the human body and its pathology is best achieved through anatomical dissections and the study of museum specimens. Hence, most medical teaching institutions integrate the study of museum specimens with regular training. For this purpose, body parts or organ specimens are retrieved or procured as per the legal provisions. When the specimens have been damaged or are no longer needed, they should be disposed of properly and not just dumped in the garbage. We report a case in which the bodies of two foetuses that were brought for medico-legal autopsy were later found to be formalin-preserved "museum specimens" that had been used for academic purposes in the department of anatomy of a medical teaching Institute.

Case report

The police received information that the bodies of two foetuses had been found lying in a heap of garbage in an open field. Suspecting foul play, the police recovered the bodies and referred them for medico-legal autopsy. The following were the external findings.

Case 1: This was the body of a male foetus, measuring 25 cm in length and weighing 295 g. The umbilical cord and placenta were intact. The length of the umbilical cord was 40 cm, the placenta weighed 110 g and there was no congenital deformity.

Case 2: This was the body of a female foetus, measuring 25 cm in length and weighing 190 g. The umbilical cord was intact

and was 10 cm long. Congenital deformities in the form of anencephaly, spina bifida, cleft lip and cleft palate were noted.

Both bodies exuded the smell of formalin. The skin was greyish, hard and fixed. On internal examination, no congenital deformity was noted. However, all the organs and tissues were greyish, hard and fixed. The stomach was empty in both cases, and the mucosa was hard and fixed. No external injuries were present. We opined that the foetuses had been preserved in formalin for a considerable amount of time. This directed the investigating agency to a "nursing college" nearby. When probed, the college authorities confessed that the foetuses had been preserved in the department of anatomy for teaching purposes, and then disposed of in the garbage dump in an open field close by.

Discussion

In both instances, cases were initially registered under:

a. Section 315, Indian Penal Code (IPC) – Act committed with an intent to prevent a child being born alive or to cause it to die after birth

b. Section 318, IPC – Concealment of birth by secret disposal of dead body.

However, since the foetuses had been used by the college authorities as teaching material, aimed at helping the students gain a better understanding of anatomy, detailed medico-legal opinion was sought and Section 297, IPC (1) was invoked. This Section states that "whoever commits any trespass in any place of worship, ... or offers any indignity to any human corpse shall be punished with imprisonment of either description for a term which may extend to one year, or with a fine or both". Such cases have several legal implications and can be instituted under various sections of the IPC.

The retrieval and procurement of human body parts, organs or the skeleton are permitted for the purpose of medical study. The parts can be termed anonymous museum specimens, and their sources are post-mortem examinations, surgical operations, and bodies bequeathed to anatomy departments (2). The Human Tissue Act 2004 (HT Act), which covers England, Wales and Northern Ireland and regulates activities related to the removal, storage, use, and disposal of human tissue, has a provision which allows individuals to pledge their bodies for use, following their death, for therapeutic purposes, medical education or research. The HT Act has extended adequate authority to coroners to use or store tissue for a scheduled purpose in autopsy cases (3). In India, the state anatomy Acts contain the legal provisions related to the use of a dead body or part of a dead body, with the prior and explicit consent of the deceased person or the authority concerned, for therapeutic or research purposes. Karnataka, for example, has the Karnataka Anatomy Act (Section 4A) (4). However, materials from post-mortem examinations and surgical pathology specimens are not adequately regulated.

Even if someone has given his/her consent to the storage of tissue, he/she should be supplied with sufficient information on the options for disposal so that he/she can make an informed choice. The information should include the details of the storage and disposal policy practised in the institution.

Human tissues deserve some degree of respect, as there is the matter of the dignity of the person from whom the tissue is obtained. Respect is due to an individual who displays the altruism to donate his/her tissues with a mind to furthering the social good as well as human knowledge. Additionally, the use of human tissues is not akin to the use of data, but a privilege that must be respected. In the view of Jones et al (2), the role of consent is opaque when it comes to research involving the use of human tissue rather than human subjects themselves. This is to be expected because the value of a person is greater than that of his/her body parts. However, when tissue can be traced back to a person, it is the researcher's obligation to demonstrate that the subject (or next of kin) approves of the use to which it will be put. Only in this manner can we safeguard the autonomy of persons and the respect due to them. Such consent should not be presumed, because some individuals may not want their tissue used for research purposes, regardless of anonymity. Anonymisation can be justified only if the initial consent encompassed the possibility of subsequent anonymisation for the purpose of further teaching or research. Such ethical and legal issues can be avoided by:

a) seeking an additional specific consent for the possible future use of specimens from surgical operations for diagnostic purposes, specifying that the specimens would be stored in museums and used for educational purposes;

b) ensuring that the post-mortem reports for all specimens collected from post-mortem examinations, either for storage in museums or histopathological examination to arrive at the cause of death with subsequent despatch to a museum, mention that the samples are stored in the museums for educational purposes.

"Bio-medical waste" means "any waste which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research pertaining thereto or in the production or testing of biologicals" (5). By virtue of their use for research purposes, "organ" specimens and slides used in pathology museums come under the ambit of the Bio-medical Waste (Management and Handling) Rules, 1998. These Rules lay down that the option of deep burial must be available for the disposal of human anatomical waste in rural areas or towns with a population of less than five lakh (6). PR Stubblefield (7) reported a case in which anthropological investigations were carried out on skeletal remains and these were interred in an informal dumping site, instead of being given a formal burial. To avoid such instances, incineration must be the preferred method of disposal of anatomical waste in larger towns, particularly in medical institutions. This method is being practised increasingly across India. However, incineration as a means of disposal should also be extended to museum specimens. Museum specimens, both archival collections and anonymous specimens, need to be disposed of separately from clinical waste.

There have been sporadic reports in the press of the illegal and improper disposal of other human waste generated by hospitals, such as body parts, particularly surgically amputated parts (8) and aborted foetuses (9). Not only is this a public nuisance, but it can also force the law-enforcing agencies to initiate unnecessary investigations. An unnecessary police investigation due to the improper disposal of a skeleton used for anatomical study has been reported by Bharadwaj (10). Such cases can be prevented by adhering to the rules of hospital waste management. The fine imposed for the violation of these rules under the Biomedical Waste Rules or the fine/term of imprisonment specified in Section 297 of the IPC may be inadequate, and the acquisition and disposal of such specimens go largely unregulated. Hence, regulations are urgently required to control the storage and disposal of human material for educational or research purposes.

The case reported here brings to the fore the urgent need for regulations for the proper collection, storage, handling and disposal of anatomical specimens. The authors suggest the following measures.

1. Collections for museums should be registered and licensed.
2. All collections should be brought under the same regulatory framework, thereby eliminating any distinction between pathology and anatomy collections. In this way, it will be possible to have a one-tier oversight system for all body parts, covering human material obtained at post-mortem examinations and that obtained during surgical procedures (2).
3. When another organisation is hired for the disposal of human tissue, which was a possibility in the case discussed in this study, compliance with the codes of practice must be ensured. It is perhaps advisable to have formal service agreements to prevent further mishaps.
4. Detailed records must be maintained of all collections of human specimens and body parts (2).
5. All collections for research projects and teaching purposes should be approved by the institutional ethics committees (2).

Statement of funding*: No funding or sponsorship was provided for this work.*

Statement of competing interests*: The authors state that there is no actual or potential competing interest, including any financial, personal or other relationships with other people or organisations, that could inappropriately influence, or be perceived of as influencing, their work.*

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