

CONTROVERSY

Cadaveric tissue donation: a pathologist's perspective

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Cadaveric donation comprises organ donation—that is, taking organs (heart, lungs, kidneys, liver, pancreas) from brain dead people, as well as tissue donation, meaning taking tissues (skin, corneas, tendons, bone) from brain dead as well as heart dead people. The organ transplant procedure from brain dead patients is beyond the scope of the pathologist, as it is done by surgeons in the operating theatre. In a broader sense, however, pathologists are involved in cadaveric tissue donation as well as taking tissues from cadavers for diagnostic procedures within the framework of the autopsy (fluids, organs, tissue samples), and to gather material for research and training students and pathology residents (tissues, organs). For cadaveric tissue donation, different ethical and practical issues must be considered, which we will try to review in this paper from the perspective of the pathologist.

CADAVERIC TISSUE SAMPLING FOR TRANSPLANTATION PURPOSES

Several tissues can be taken from “true” cadavers that may still be used for transplantation such as skin, corneas, tendons, bone. This is usually done in collaboration with the pathologist, who is in most countries responsible for the body after the death of the patient in the hospital. All these tissues can be harvested several hours after death, as they undergo only slow degradation. In The Netherlands, as dictated by law, patients must actively have given permission for donation during life by registering with the Transplantation Register. Since this procedure was implemented, the number of organs available for donation has not increased but decreased somewhat, while the number of tissues has increased. A great obstacle to the increase in the number of donations is that only 37% of the population is registered (as either donor or non donor) and that the next of kin almost always refuses donation for the 63% of the population that is not registered, on account of the fact that the deceased has not registered their willingness for this to be done.

When no autopsy is performed, the procedure of taking tissues for transplant purposes is rather intrusive to the cadaver, except perhaps for the cornea, so it is proper to have permission of the patient for this (given during life), as is the case in our current system in The Netherlands. Alternatively, this should be at least covered by the fact that no objection was registered under a legal “opting out” system.

The position of the next of kin is something else. In The Netherlands, doctors will usually respect the objection to a donation procedure expressed by the next of kin. This is especially relevant when the patient has not registered with the Transplantation Register. Even if the patient has registered as a donor, however, doctors will usually refrain from a donation procedure if the next of kin objects. The most common argument for this is that the next of kin have to live on with the knowledge that some tissues or organs are being used for transplantation, which is emotionally difficult if they feel negatively about this. This argument is only used in refusing donation. When a person has registered an objection to donation, and the next of kin are very much in favour of donation,

they will have to live on with the knowledge that tissues were not used for transplantation, emotionally difficult or not. We think that a parallel can be drawn here with a will. A regular will is always respected, even if the next of kin do not like it. To express the wish to donate organs and tissue for transplantation by signing up with the Transplantation Register can be considered to be the last will of the patient with respect to the body and should be respected as well.

The taking of tissues for transplant procedures within the framework of the autopsy is still more intrusive than the usual autopsy procedure, as corneas, skin, bone, and tendons are only investigated in exceptional circumstances, so the above considerations can be deemed fully valid.

CADAVERIC TISSUE SAMPLING FOR DIAGNOSTIC PURPOSES

As has been painfully clear since the Alder Hey affair,^{1,2} pathologists take ample samples for diagnostic purposes during autopsies for culturing microorganisms, and cytological and histological investigations. This is an integral part of and a *conditio sine qua non* for a proper autopsy. As such, it is covered by the permission from the next of kin that is in most countries required to perform an autopsy. This should not be challenged in view of the intrusive nature of the autopsy and the consequent emotions of the next of kin. Obviously, forensic autopsies are an exception here.

After completing the usual diagnostic procedures within the framework of the autopsy, there is usually a rather large volume of leftover material comprising sections, paraffin blocks, and wet material (organs and tissue samples kept in formalin). It is common practice to keep paraffin blocks and sections for reasons of quality control, and for future diagnostic procedures requested by family members—for example, in case of hereditary diseases. This is very much justified, and can be considered to be covered by the permission given for the autopsy itself, but the Alder Hey affair has taught us that it is wise to properly inform those giving permission about this.

Besides this obvious benefit for the family, leftover material can be very well used for scientific and educational purposes. As has been argued in detail elsewhere,³ we would like to argue also that no permission is required for such reuse when the privacy and interest of the patients involved can be guaranteed through some basic safeguards. We have to realise that current knowledge used to diagnose and treat today's patients has been obtained from research using data and material from patients in the past, and that future patients can be optimally diagnosed and treated only by using material from today's patients. Likewise, doctors who have treated today's patients have achieved their current high professional level by training with the use of leftover material (including complete organs). To ensure that enough material continues to be available for the training of future medical generations, it will remain necessary to reuse left over tissue and organs on a small scale from today's patients. We believe that the principle of solidarity should take priority over the right of self determination here. Reuse of leftover material in no way makes the initial diagnostic procedures more intrusive, and therefore does not

physically harm the deceased patient beyond the regular autopsy. In the end, the choice is between using leftover material further for valuable scientific/educational purposes and throwing it away!

An issue that is largely neglected in this discussion is what patients really want. We feel the vast majority of patients are not very afraid that their privacy is breached and their interest is harmed by the average reuse of their leftover body material, and will trust doctors and scientists to use it properly for educational and scientific purposes instead of throwing it away.

In the case of non anonymous use, permission is required because the privacy of the patient may be breached. "Non anonymous" use has not been sharply defined in this context, but we suggest that this term may be applied to any use of material or data (including pictures) from that material that can directly be traced back to the patient.

Care has to be taken when transferring tissue outside the original institution, but further use within the original institution is usually covered by the normal medical privacy laws and regulations.

CADAVERIC TISSUE SAMPLING FOR EDUCATIONAL AND SCIENTIFIC PURPOSES

It is a different situation when cadaveric tissue sampling or organ harvesting is specifically done (outside the framework of the regular autopsy) for scientific or educational purposes. In these cases, permission from the next of kin should be obtained, as this concerns an additional intrusion to the body beyond regular procedures. In exceptional circumstances, patients themselves give permission for autopsy and tissue sampling. In The Netherlands—for example, patients with

neurodegenerative diseases may register with the Dutch Brain Bank to donate brain and/or spinal cord tissue for scientific purposes.⁴ It is also possible to specifically leave your body to anatomy departments for science and education. As for transplantation, the patient's own will and/or wishes about his or her own body should take priority over the eventual objections to their use for transplantation from the next of kin.

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