12

Ethical Issues in Pre-Cancer Testing: The Parallel with Huntington's Disease

DONNA L. DICKENSON

Genetic testing and screening for susceptibility to various forms of cancer raise ethical issues about consent, confidentiality, the professional–patient relationship, and duties of care toward third parties, such as family members. The questions are both broad – because they cover so many core areas of medical ethics – and frustrating – because genetic knowledge for cancer remains imperfect. In this chapter I want to do two things that may alleviate some of the frustration. First, I want to look primarily at one set of ethical questions out of the many that arise: decisions about whether genetically susceptible individuals should have children. The ethical debate about pre-cancer testing and screening, at least in the West,[1] has so far largely centered on the affected individual's right to know, together with the confidentiality of that information. In practical terms this may be understandable, given the conflicting interests of those tested and their employers, health providers, and insurers. But an equally pressing issue is the decision whether or not to have children, if testing reveals a strong familial tendency towards breast, bowel, or any of the other cancers that are thought to have a genetic component. Is it morally wrong to transmit the risk to the next generation? I will be drawing on a case study from UK clinical practice, about "Peter" – a young man whose father tested positive for Huntington's disease shortly before his death. But Peter did not want to know his own genetic status, although he and his wife had young children and were considering having more.

I shall thus suggest that we can gain a better grip on the issues involved in pre-cancer testing by looking at genetic testing for quite a different condition. This is the second way of making the ethical issues in pre-cancer testing less frustrating. There, the imprecision that marks genetic testing at the pre-cancer level is replaced by something much more akin to black and white. What we have in the case of Huntington's disease is a small population of at-risk individuals – compared with an enormous population at risk for one form of cancer or another – whose probability of developing the disease is accurately predictable with a low error rate mutation test – compared to much fuzzier probabilities in the case of cancer. By using Huntington's disease as an extreme limit of questions about risk, benefit, and certainty of the testing procedure, we can suggest parallels that may help us to predict with greater clarity the ethical issues which will arise as pre-cancer testing and

screening become more sophisticated. Because Huntington's disease is an autosomal dominant condition, because the condition is not multifactorial, and because the test procedure is very accurate, the issues about testing for Huntington's disease are less confused, although no less troubling, than those for pre-cancer testing.

Let us take these differences one by one, together with their ethical impact:

1. The *risk of genetic transmission* from affected individual to child is 50 percent for Huntington's disease, a far higher correlation than for any cancers. In a philosophical utilitarian calculus, at least, it is more wrong to choose to have children if you have a condition with a high probability of affecting the next generation than if your condition has only a slight chance of being transmitted. This is particularly true *if high probability of transmitting the condition* combines with *low probability of curing the disease* once it has been transmitted. A progressive disease of the central nervous system, Huntington's most commonly manifests itself in middle age, with death occurring inexorably between 15 and 20 years later. Although genetic transplantation techniques may eventually offer some promise, at the time of writing the disease was effectively incurable.

2. *Single-factor* conditions such as Huntington's disease are *simpler to predict*. No other risks, such as environmental factors, enter the equation: if you have the genetic mutation on chromosome 4, you will definitely develop Huntington's disease, although the exact time of onset is less predictable. The converse is that at present there is nothing that the affected person can do to prevent the disease. So there is arguably no benefit in knowing your genetic status, and possibly a great deal of anguish. The ethical question then becomes whether it is wrong for healthcare professionals to impart adverse information about genetic status – even if someone consents to be tested.[2]

3. There are effectively *no false positives or false negatives* in the testing procedure for Huntington's disease. The single genetic mutation for the condition can now be identified with great predictive accuracy in a test involving numbers of repeats of the gene, isolated in March 1993. As of 1995, the screening procedure had been tested on approximately 4,000 patients, amassing a record of very few false results. The ethical effect of this unusually great degree of certainty is two-edged. Clinicians do not run the risk of falsely worrying a patient who will not develop the condition, but they cannot offer hope either: any positive is a true positive. Even asking someone to come for testing alerts them to the possibility that something is wrong: in that sense the patient is not consenting entirely of their own free will to being given the information about their genetic status.[3] And if disclosure of an unfavorable genetic status takes away all hope, clinicians in some cultures might be unwilling to test at all. For example, in rural Italy preservation of the cancer patient's tranquillity is more important to family and doctors alike than is the full knowledge and control that Northern Europeans and Americans value.[4] We must be cautious about generalizing from what has been called the western "autonomy-control narrative."[5]

So now, the "Peter" case study, taken from a large UK psychiatric teaching hospital.[6] Peter's 73-year-old father, "Henry," had been diagnosed with atypical Alzheimer's disease, but his symptoms were still not fully explained. The family history, however, included a number of other members who had manifested jerky movements or dementia late in life. Henry's clinical team decided to request permission from his family to use the newly available genetic test for Huntington's disease, which revealed a positive result.[7] But after Henry's death ten days later, it became clear that neither his wife "Mary," his son "Peter," nor his daughter "Ann" had fully understood the implications for themselves and other family members of giving their consent to testing Henry. Henry's wife Mary wanted to test everyone in the family immediately: the four grandchildren, in addition to the son and daughter. Peter, himself a healthcare worker, was determined that he did not want to know his genetic status – to the doctors' dismay, since Peter had two young children and was of an age to father

more. Henry's daughter Ann wanted to be tested immediately, without any genetic counseling. She was glad that the issue had been brought out into the open; Peter wished he had never been told.

This case raises unusual issues about ownership of information and informed consent. When the family gave their consent to have Henry tested, the son and daughter, at least, were also consenting to a certain level of torment about their own genetic status. Even more important, the case raises important questions about rationality and the possession of full information. Philosophers have tended to associate rationality with possession of full information,[8] and autonomy with an instrumental model of rationality, one about using reason to satisfy preferences. Arguments in favor of informed consent in turn rest on autonomy and rationality: a rational autonomous individual wants to know as much as possible before making treatment decisions. The usual dynamic in medical ethics has been the demand for more information from the patient, against paternalistic secrecy from the clinician. So, again, this case looks odd. Here we have clinicians who want the (prospective) patient, Peter, to know his genetic status – but Peter doesn't want to know.

Is it *irrational* for Peter not to want to know whether he has inherited the gene for Huntington's disease? Is it *unethical* not to want to know? The archetypically rational individual wants information for instrumental purposes, in order to act so as to produce the best possible outcome, avoiding mistakes deriving from inadequate reflection.[9] But if Peter does carry the Huntington's disease genetic mutation, there are no mistakes to avoid and no treatment decisions to make: there is simply no possible treatment. In a twist on the notion of rationality as possession of full information, it might well be rational for Peter not to want to know. Let us assume he does carry the genetic mutation, and that he will begin to develop symptoms within ten years. Perhaps the best possible outcome, given that the disease will progress inexorably once it begins, is for him to enjoy ten years' comparative peace of mind beforehand. But can Peter really return to an innocent state of total ignorance? He does not consent to be tested himself, but, at the time he consented to have his father tested, he knew that the results would affect the entire family. It now seems hypocritical of him to maintain that ignorance would be bliss. This is particularly true because Peter and his wife "Beth" could well have more children. Peter's ignorance is not going to be Beth's bliss. So far, he has kept the true cause of Henry's death and the ensuing family debate from her. But she needs to know, before she undergoes another pregnancy, whether she is bearing a child who may die of Huntington's disease. Peter and Beth's existing children may not need to know their genetic status yet, but the couple need to know Peter's risk level in order to plan as best they can for their individual and collective futures.

The issue is not the particular level of risk; it is who has a right to know. Because Beth has rights in the matter too, Peter's secrecy would be just as wrong even if his risk of developing a fatal disease were less than 50 percent, or if the chances of recovery were higher than nil. Another way of putting the issue is this: to whom does Peter owe a duty? Philosophers have discussed the problem of future generations in terms of what duties we owe to hypothetical individuals – when it is difficult enough to spell out our duties to those in the land of the living. But in this case, it seems plausible that Peter can even have duties to those descendents whom he will not have, whose birth Peter and Beth will want to prevent if Peter does carry the gene. Yet this is primarily Peter's duty; the clinical team does not have the duty to divulge his genetic status, on his behalf, any more than your failure to give to charity gives me the duty to take the wallet out of your pocket and hand it over to Oxfam.

All this is instructive for pre-cancer testing and screening. Although genetic information is normally seen as belonging solely to the affected individual, and therefore as subject to stringent confidentiality even from other family members, it is family property in a way that other medical data are not.[10] By definition, as germ-line data, genetic information concerns other generations, other family members: it is about them too. But their rights are enforceable vis à vis other family members, not clinicians. It is Peter who has the

duty to inform Beth, not the doctors. He cannot avoid this duty by saying that he does not know his own genetic status; he ought to want to know it, in order to fulfill his duties toward his wife and prospective children. Although he may be acting rationally in not wanting to know, he is not acting ethically.

This conclusion imposes strong obligations on Peter, but it might be criticized for imposing few on the doctors. On the other hand, it does not absolve clinicians who let how much to inform depend on the level of risk.[11] The implications about risk and rights are strenuous; the right to know does not vary with the level of risk. Beth would have had just as great a claim to know Peter's genetic status, given the possibility of future pregnancies, if there were only a 1 percent risk of transmission to the next generation, not 50 percent. And the legitimate claims of others should make clinicians less troubled about whether it is right to impart adverse genetic information to family members who might be affected. Those individuals' rights to sensitive communication and skillful counseling remain important;[12] but they do not extend to the right not to know, when exercise of that right is likely to harm others.

NOTES

1 For an alternative approach stressing family ramifications which may be more typical of non-western views, see Hoshino, K., "Bioethical concerns with rights of patients receiving genetic tests." Paper delivered at the UICC Symposium on Familial Cancer and Prevention, Kobe, Japan, May 14, 1997.

2 However, one study indicates that there is no greater psychological morbidity for patients informed that they have tested positive for the Huntington's marker than for those who were told they had a negative status. But there is already a high prevalence of affective psychological disorders in persons at risk for Huntington's disease. See Brandt, J., "Ethical considerations in genetic testing: An empirical study of presymptomatic diagnosis of Huntington's disease," in K. W. M. Fulford, G. Gillett, and J. Soskice (eds.), *Medicine and Moral Reasoning* (Cambridge: Cambridge University Press, 1994).

3 Elgesem, D., "Patient rights and the management of personal information." Paper given at the sixth workshop of the European Biomedical Ethics Practitioner Education project, Naantali, Finland, September 6, 1996.

4 Gordon, D. R. and Paci, E., "Disclosure practices and cultural narratives: Understanding concealment and silence around cancer in Tuscany, Italy," *Social Science and Medicine* (November 1995).

5 Ibid. Blackhall et al. found that Korean Americans and Mexican Americans were significantly less likely than European Americans and African Americans to value patient autonomy and rights in relation to disclosure of a terminal diagnosis and ongoing care decisions. They also felt that the family should be the main decision-making authority about the use of life support, and that it should not be up to the individual patient. (Blackhall, L. J. et al., "Ethnicity and attitudes toward patient autonomy," *JAMA* 274/10 (1995): 820–5.)

6 First published in Dickenson, D., "Carriers of genetic disorder and the right to have children," *Acta Geneticae Medicae et Gemellologiae* 44: (1995): 75–80.

7 Although next of kin have no right in English law to give or withhold consent to treatment, the clinicians felt obliged to consult the family because Henry's competence fluctuated.

8 Brandt, R., *A Theory of the Good and the Right* (Oxford: Clarendon Press, 1979), p. 10.

9 Ibid, p. 153.

10 For a similar argument about gametes, see Dickenson, D., "Procuring gametes for research and therapy: the case for unisex altruism," *Journal of Medical Ethics* 23/2 (1997): 93–5.

11 As is legitimate in United Kingdom consent doctrine: *Sidaway v. Board of Governors of the Bethlem Royal Hospital and Maudsley Hospital* [1985] AC 871 1 All ER 643, HL.

12 Chadwick, R., "What counts as success in genetic counselling?" *Journal of Medical Ethics* 19 (1993): 43–6.