

5-1-1953

Medical-Moral Problems in Neurosurgery

Thomas P.R. Hinchey

Follow this and additional works at: <https://epublications.marquette.edu/lmq>

 Part of the [Ethics and Political Philosophy Commons](#), and the [Medicine and Health Sciences Commons](#)

Recommended Citation

Hinchey, Thomas P.R. (1953) "Medical-Moral Problems in Neurosurgery," *The Linacre Quarterly*: Vol. 20 : No. 2 , Article 4.
Available at: <https://epublications.marquette.edu/lmq/vol20/iss2/4>

Medical-Moral Problems in Neurosurgery

THOMAS P. R. HINCHEY, M.D.

President, Guild of St. Luke, Boston, Mass.

THE moral principles by which an action is judged are no different in neurosurgery than in other forms of medicine. It is only the application of these, and in the frequency of that application that we have any peculiar problem. Death is a hazard in so many neurosurgical procedures, that a conscientious man will hesitate to use them unless there is a specific indication. An example of this is in the use of cerebral arteriography, particularly in those beyond middle age where paralysis or death may result unless care is taken in choosing the candidates for it. Imagine what might happen if the internist or the general surgeon had to worry about the hazard of death every time he ordered a gall-bladder series!

Another example of this peculiarity in application, is in the closure of wounds. After incomplete removal of a malignant brain tumor, should the wound be closed tightly, including the dura and bone, or should a large opening be left in the dura and bone? If a tight closure is done, then death will ensue more rapidly, but if a large decompression is left, the patient may develop severe headaches when the tumor recurs and begins to bulge out through the defect. It may prolong his agony, and result in an ugly protrusion which in itself may be difficult to care for. Depending upon circumstances, a strong argument might be made for either procedure.

Although the principle that life must be preserved is our general rule, difficulties arise when applied to individual cases. On an island in the Pacific when penicillin is very scarce, the use of it in treating pneumonia in a patient with terminal cancer, might be considered unwarranted, particularly if there were others about whose lives could be saved by the small amount of penicillin available. The question of parenteral fluid administration and antibiotics in a doomed patient is common to all branches of medicine.

It is precisely because of this difficulty in application of principles that I have decided to discuss a type of disease frequently encountered by neurosurgeons, and consider the application of the broad principles to the individuals with this disease. We will also consider how advances in medicine may change one's decision. The discussion will be concerned with gross

congenital defects of the central nervous system which might be considered remediable by surgical means, viz.; meningoceles, meningomyoceles, encephaloceles and hydrocephalus.

In this group there will be cases where the decision to be reached regarding therapy is immediately obvious. The simple meningocele consists of a sac containing fluid which protrudes on the back through a defect in the bony lining of the spinal canal. The wall of the sac is made up of the membranous covering of the spinal cord, and may be very thin. If untreated, meningitis will almost surely occur due to leakage through the wall or rupture of it. To prevent this, operative excision of the sac is carried out and the wound closed tightly with fascia. Operative results are good in an uncomplicated meningocele, and the operation is relatively easy to perform. This then, is one instance where the decision is obvious.

A meningomyelocele is made up of the same things that are present in the more benign meningocele, and in addition has spinal cord elements present. It is almost always accompanied by paralysis of the legs, bowels, and bladder due to the lack of function in the cord. It is not infrequently associated with hydrocephalus, and let us say that there is a large degree of hydrocephalus. Occasionally there is also a defect in the development of the upper portion of the cervical spine, where the base of the brain is apparently being pulled down into the upper neck. A child with all these troubles would indeed have little hope of recovering even though he underwent at least three major operations. Most neurosurgeons would not attempt to operate on this infant. Indeed most authorities^{1,2} feel that paralysis of the legs, bowels and bladder are in themselves a sufficiently strong contraindication to surgery on meningomyeloceles.

It is those who fall between the two extremes who give us the most concern. What should be done, for example, with the child who has a meningomyelocele with resulting paralysis of the legs, bladder and bowel, with no other apparent defect? Operative repair is difficult and even if successful he will probably still be at least partially paralyzed if not totally. Infants do not tolerate extensive procedures well, and will be a severe nursing problem post-operatively. Up until age three or four, he can be expected to be wet almost constantly because of urinary dribbling, and will be a big financial drain upon the family. When the child finally returns home, will the parents be able to provide the loving care needed by the patient and at the same time not deprive other children in the family of their just share of the parents attention? Because of its handicap will the child grow up an emotional cripple? This largely will depend on the ability of the parents to provide a fairly normal homelife. Will the family or some agency supply wheel chairs, leg braces, special shoes, teachers, rehabilitation facilities, etc.?

Above all, will this child develop hydrocephalus before it is a year old and thus, perhaps, vitiate all the previous effort expended in relieving the primary defect?

In spite of all these difficulties that result from an attempt to treat this disease by surgical intervention, the untreated infant will almost surely die. This is true of meningomyeloceles and the usual progressive hydrocephalic.

Let us consider some of the advances made in medicine in recent years which would make us somewhat less pessimistic about the outlook. The problem in treating hydrocephalics is to dispose of an excessive amount of cerebrospinal fluid that has collected in the ventricles of the brain, for a reason that is unknown to us. There are two general methods of diverting the fluid from the ventricles. In one, a kidney is removed, and a plastic catheter carries the fluid to the ureter and thence to the bladder where it is expelled with the urine. The other procedure attempts to conserve the fluid within the body, and so the catheter may be directed into the middle ear or into the abdomen. From the middle ear, it passes by way of the Eustachian tube into the pharynx and is swallowed like saliva. In this method, the child is exposed to the danger of developing a meningitis at any time he develops a cold or a middle ear infection.

In treating defects of the spinal canal and cord, the big advances have been in the development of the antibiotics and plastic surgery.³ One of the main causes of failure, usually resulting in death has been infection at the operative site. This is due in part to the proximity of the wound to the rectum, but also to the fact that the wounds are often closed under tension. Now by swinging a skin flap, the defect left by the removal of the sac can be easily closed without tension, and antibiotics given to insure against secondary infection. In addition the rectum is walled off from the operative sight and the child allowed to lie on his abdomen until the wound heals.

One of the most remarkable advances has been in the field of physical medicine, which has been greatly stimulated by the warfare of the last decade. It involves many different techniques which vary from teaching an individual to manipulate his crutches and braces so that he can get into a movie seat, to teaching of knitting for manual dexterity. It is obviously slow and expensive, and requires well trained personnel, but much can be done with paralyzed adults and I am sure the same can be said of paralyzed children.

How, then are we to decide on the moral aspects of such surgery? Our inclination will be to attempt to save as many as possible by whatever means possible. However, we would not want to cause great financial, spiritual,

and emotional suffering in the family of the child involved. Therefore, what is our obligation?

As creatures of God we possess our bodies as tenants rather than as absolute owners in much the same way as did the foreign governments possess the ships they obtained from the United States in lend-lease during the last war. They were not to dispose of them under any conditions, but were obliged to maintain them in good condition consistent with their continued use as implements of war. However, when damaged severely in battle, they did not have to sacrifice all their personnel just to keep the ships going. In other words, the effort expended to maintain the ships had to be in proportion to the chances of restoring the ship to the point where it could carry out its normal purpose—fighting.

So too, as lessees and not absolute owners of our lives, we cannot terminate life, but must use available means to preserve it. In addition there must be a just proportion between the cost and effort required to preserve it, and the potentialities that would exist if that life were preserved. In determining the just proportion, there will be so many individual factors that no general statement can be made. However, we can consider the meaning of the phrase "available means" and can arrive at some general conclusions.

Moral theologians tell us that we must use "ordinary" means to preserve health and life. But after making that statement, they seem to scatter to the winds on defining "ordinary." Some have identified ordinary with natural and therefore nothing more than eating, drinking, sleeping, and exercising would be required, thus excluding the use of aspirin let alone major surgery. Others have said that means which involve excruciating pain, danger of death, excessive expense, or great subjective repugnance are extraordinary, and therefore need not be done. By far the best definition I have found, and incidentally the best discussion of the whole problem of ordinary and extraordinary means, is to be found in an article appearing in the *Linacre Quarterly*, February 1951 by Fr. Thomas J. O'Donnell, S.J.⁴ "Ordinary Means might best be defined as those which are at hand and do not entail effort, suffering or expense beyond that which men would consider proper for a serious undertaking, according to the state of life of each individual." He then added: "Apart from subjective consideration of pain, expense, or personal abhorrence—most of the commonly available techniques of modern surgery and medicine should be classified as ordinary means of preserving life."

It is my feeling that with the advances in modern surgery, the availability of blood, antibiotics, bone banks, rehabilitation services, and good nursing care more of these children should be operated upon. Their outlook

should not suffer too much by comparison with some of the unfortunate children with cerebral palsy upon whom we do expend such effort. The actual operative procedures described would certainly fall within the definition of ordinary means. In treating a specific infant, the doctor with a good conscience must decide whether there is a just proportion between the effort that will be expended before the child reaches adolescence and the potentialities of the child when a semblance of health is restored to progress toward his ultimate end—personal sanctification.

SUMMARY

The medical-moral problems encountered in neurosurgery are not different in principle but only in the frequency of their application.

The problems involved in treating gross congenital defects of the central nervous system have been reviewed. As a general rule, surgical treatment is indicated because it can be considered to fall within the definition of "ordinary means" required to maintain life.

The neurosurgeon must then decide on the basis of all the factors involved whether there is a just proportion between the effort expended and the result to be obtained.

REFERENCES

1. Gurdjian, E.S. & Webster, John E.—Operative Neurosurgery—Williams & Wilkins Co., Baltimore. 1952 p. 295.
2. Ford, F. R. Diseases of the Nervous System in Infancy & Childhood.—2nd Edition—Charles Thomas—1945. p. 285 and following.
3. Edgerton, Milton T.—Surg. Clin. N. America—Oct. 1952—p. 1327 to 1345.
4. O'Donnell, Thomas J., S.J.—Linacre Quarterly 18:22-31—Feb. 1951.

ADDITIONAL REFERENCES

- Ingraham, F. D. Spina Bifida & Cranium Bifidum; A Surgery of 546 Cases. *New Eng. J. Med.* 228:745-750, 1943.
- Bachs & Walker A. E.—Surgical Clinic on Hydrocephalus—Surg. Clin. N. America, October 1952—p. 1347-1361.