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How quickly we can repair our artificial knee joint without new surgical operations

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Introduction

During our life, unfortunately, many people get different traumas/damages, for example: breakings, destructions of the inner organs in consequence of the internal diseases. There are many problems for a man because of the nervous stress. Sometimes a person cannot open one eye or bend one finger or leg and so on.

Doctors try to treat using our effective medicine drug but in a very hard and complicated cases they are forced to restore it and go to the surgical operations. If it is not any possibility to renew the anchyloses/joint which was destroyed practically in full, they try to install the artificial hinge.

From science "Tribology" it is common knowledge that any mobile connections will get the deterioration for any pairs of friction "body – counter body". Such situation will disturb the normal function of working for these parts. Because of the wear and tear on the surfaces of friction a man will have a problem in movement or in a work without fail. If the speech is going about the human knee [1], we are bold to say that a man will feel a sort of discomfort and danger to fall or make something badly. That's why we try to suggest one of the possible way how quickly doctor can reform such situation.

Shot excursus in tribology

Everything in the world is wearing constantly. Parts of machines and mechanisms, piston rod and valves, hinges and guides, rails and wheels, bearings and so forth [2]. Different lubricants cannot save any pairs of friction against wear and tear. In a human organism there are very many pairs of friction as well (phalanges of fingers, neck and back vertebras, funny-bones and shoulders joins). Of course, modern medicine and especially surgery at the present moment reached the prominent results from the situation which took place many years ago [3].

Let's suppose that one doctor decides to use an implantation and is to put it into the body. At this moment some difficult aspects are appearing before him, namely:

- what kind of material he must take for this action;
- what's the way he has to strengthen the artificial element/part into the human body;
- how long this implantation will be working carefully into the human body;
- how many times any doctor-surgeon must make the next operation to extend the term of operation for the "old" implantation or, maybe, it is needed to replace the old one;
- what kind of medicine he has to recommend for the patient to protect organism against different problems connected with this implantation;
- how often this patient must go to the doctor to get the diagnostic control and so on.

Many of these above-cited enumerated factors directly join with the speed of deterioration for surfaces which take place in the ball hinge which will be set in the knee. This pair of friction doesn't make any squeak during the operation and it must secure the smooth movements and the different turnings or/and rotations. At last the small elements of wear and tear must not be like the carcinogenic particles for our organism which can cause the inner inflammation.

The gist of recommendation

We know that the modern medicine has the very many outstanding achievements in different sphere of activity (surgery, stomatology, transplantation for the different organs, therapy and in the medical treatment for the very complicated and dangerous diseases).

In our case we must think about the way which will help us to solve this fundamental problem – How doctor can rehabilitate the damaged organ, namely, the knee cup (knee hinge)? And at the same time another question appears: how can we quickly repair the worn mobile junction in the artificial assembly?

It seems to me, that we must remember the football ball and the rubber tyre. To get these objects in good and right shape we take the pump to pump full them. When the shape and pressure will be in definite condition we stop our action and each object will be ready to work. After some time period we must repeat this procedure.

For the artificial knee hinge, evidently, we get practically the same picture. But one important question appears immediately. How can we realize this way in practice?

Let's depict this new procedure in detail.

We must make the artificial hinge as a ball with a small valve which has the thin hose. This last part must be put out on the outside

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of the leg (quite near to the knee). Material for the artificial hinge must be such which has enough endurance and moreover this material must be hermetic. And another additional condition must be realized in practice – this material must be compatible with the human organism too.

Making the operation for a patient under the anesthetic doctor must insert this artificial hinge into the place where the healthy joint was. The thin hose must be out of the human cutis of course. After its doctor must put stitches in. The next action is connected when doctor pumps clear air into the artificial hinge (as into the balloon).

When this procedure will be finished a small balloon with the portion of the clear compressed air must be connected with the end of the thin hose. Moreover, this balloon must have a small tap or the button to have the possibility to open the passage for the compressed air into the artificial hinge (in this case it is the balloon).

This procedure helps to restore the initial shape for the hinge which has got some alterations for its shape because of deterioration during the operation.

Conclusion

In this short paper author described in brief one of the new ways to help man who has the serious problem for example with knee cup which was essentially destroyed during the accident.

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