Robots May Allow Surgery in Space

By CHUCK BROWN
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OMAHA, Neb. (AP) -- Small robots designed by University of Nebraska researchers may allow doctors on Earth to help perform surgery on patients in space.

The tiny, wheeled robots, which are about 3 inches tall and as wide as a lipstick case, can be slipped into small incisions and computer-controlled by surgeons in different locations.

Some robots are equipped with cameras and lights and can send back images to surgeons. Others have surgical tools attached that can be controlled remotely.

"We think this is going to replace open surgery," Dr. Dmitry Oleynikov said at a Wednesday news conference. Oleynikov is a specialist in minimally invasive and computer-assisted surgery at the University of Nebraska Medical Center in Omaha.

Officials hope that next spring, NASA will teach astronauts to use the robots so that surgeries could one day be performed in space. Delays in communication because of the distance to space would mean surgeons on earth would have tell astronauts what commands to give the robots, Oleynikov said.

However on earth, the surgeons can control the robots themselves from other locations, Oleynikov said.

On battlefields, the robots could enable surgeons in other places to work on injured soldiers on the front line, said Shane Farritor, a university engineering professor who helped design them.

Researchers plan to seek federal regulatory approval early next year. Tests on animals have been successful, Oleynikov said, and tests on humans in England will begin in the spring.

The camera-carrying robots can provide views of affected areas and the
ones with surgical tools will be able to maneuver inside the body in ways surgeons' hands can't, Oleynikov said.

Because several robots can be inserted through one incision, they could reduce the amount and size of cuts needed for surgery, which would decrease recovery time, Oleynikov said.

"We think with robot assist, we can do better than human hands," he said.

The views from the camera-carrying robots are better than the naked eye, Oleynikov said, because they send back color images that are magnified.

A robot capable of doing biopsies is in the works and another is being designed that can be inserted into a person's stomach via the esophagus.

The robots themselves currently cost about $200 each, Farritor said.

Initial plans call for each robot to be used once and then disposed of.

Eventually, Oleynikov said, the tiny robots may enable surgeons to work without ever placing their hands in patients' bodies.

"That's the goal," Oleynikov said. "It's getting easier and easier. We can do even more with these devices."

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On the Net:

University of Nebraska Medical Center: http://www.unmc.edu

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