УДК 61:615.1(043.2)
ББК 5:52.82
ISBN 978-985-21-0251-3

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MODERN TECHNOLOGIES IN SURGERY

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The aim of this work is to provide an overview of modern technologies in surgery. Based on the Internet resources and the scientific literature available, the latest news and discoveries in the field of surgery have been analyzed and summarized to find the most promising and efficient developments.

Advances in modern surgery are almost incredible. Significant changes in surgery began during the Industrial Age in the mid of 18th century with the simultaneous introduction of anesthesia, asepsis, pathology, new instrumentation, etc. Nearly a hundred years later, in the 20th century as the Information Age was about to begin, surgery was advancing with antibiotics, intravenous fluid, radical surgery resections and chemotherapy. In the 21st century a series of breakthroughs in the field of robotic surgery technologies have been made – smart operating rooms and 3D printing were invented and successfully implemented in performing operations.

Transplantation of organs and tissues has saved and improved millions of lives throughout the world and provided public health benefits. Kidney, heart, lung and liver transplants, as well as fatty tissue transplantation have become successful treatment options for patients with advanced progressive diseases.

The scope of surgery has increased remarkably in the 21st century. The three basic principles of modern day surgery are minimally invasive, organ sparing or saving and maximally restoring. Many new ergonometric instruments have been invented, allowing safer and easier procedures. Now the main aims of the surgeon are not only to perform operations and save people's lives, but to shorten total recovery time and to make an operation less heavy-going.

Nowadays, medicine is advancing rapidly thanks to the new technology of 3D printing, laparoscopies, endoscopy and smart operating rooms which are just a few examples of how this collaboration is improving the quality of work of health professionals and the quality of life of patients.