Current Status of HBP Research Field

Surgeons Need Basic Research?

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What is basic research? Basic research is the academic experiment performing in laboratory setting using animals or other biological models like cell or tissue in vitro technique. In contrast, clinical research is the experiment using human subjects; including prospective and retrospective outcome studies, cohort studies and studies involving human tissues and cells.

Basic research is not only a social responsibility, but it is also a core value of the profession of surgery itself. The main reason for doing basic research is because of a genuine interest of surgeon in the field of science and academy. Basic science research is the opportunity for surgeon to do something more valuable than treating a single patient in the operating room.

Basic surgical laboratory research has been a vital part of principle of surgery since last 20th century. Areas, in which major advances arose from many outstanding researches done by surgeons, include cardiac surgery, organ transplantation, vascular surgery and endocrine control of cancer. There are too many to name them all. Many surgeons have won the Nobel Prize in medicine last decades. However, situation of surgical practice has been changed now a day. The opportunity to perform basic research studies is threatened by increasing the demand of clinical activity. This is a universal problem for all of surgeons worldwide. In America and France, the number of basic research performed has been decreased markedly. The surgeons are having pressure from increased number of operations. Inevitably, surgeons are devoting more time to take care of patients and having less time to follow their academic pursuit of research. These problems may undermine the future ability of surgeons to contribute understanding of physiology and treatment of surgical disease.

Advances in the understanding pathophysiology and treatment of disease will be improved if the surgeon is a front line investigator. To improve and upgrade surgical treatment itself, surgeons are the best candidate for this job. By evaluating results and addressing clinical problems, surgeons can use scientific methodology to enhance recovery of the surgical patients.

There are many themes of basic research of surgery such as transplantation, oncology, artificial organs and so on. Major categories are studies of cell and organs, immune system, genetics, pathophysiology and pharmacology.

How can surgeon get start in basic research science? As basic research continues to be an important part of surgery, all possible methods should be considered to increase support and opportunity for the research. The first step is to train young surgeons and it will enhance the research training. The second step is redirecting priorities among surgeons. The scientific productivity should be required as a first priority of surgeons. The other strategy is to collaborate with basic scientists such as immunologist, biochemist and so on.

Dr. Wells gave some advice to young surgical scientists; “Pick a good mentor. Work with partner, Enjoy competition, Be lucky, Devote as much effort to presenting your work as to the experiment themselves.

There is no doubt that major advances to medicine of 21st century will continue to arise from research in surgery. Surgeons should have more opportunities of good research training and should provide time themselves for basic research.

References

1. Meldrum DR. Basic science: Why do we do it? J Surg Res 2004;119:160-161.
2. Ko CY, Whang EE, Longmire WP, McFadden DW. Improving the surgeon's participation in research: Is it a problem of training or priority? J Surg Res 2000;91:5-8.
3. Souba WW, Tanabe K, Gadd MA, Smith BL, Bushman MS. Attitude and opinions toward surgical research. Ann Surg 1996;223:377-383.
4. Barker CF. Science, specialization, and the American surgical association. Ann Surg 1997;226:211-228.
5. Moris PJ. Research and Surgery. Ann Surg 1997;226: 666-667.