

Original Research Article

Application of Animal Experiment in Surgical Teaching

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Abstract: Animal experiment of surgical science is the basic operation for medical students to fully contact with clinical surgery for the first time. This paper reveals the importance of animal experiment teaching in surgical science from the characteristics of medical specialty in our school. It aims to arouse medical students' interest in surgical experiments.

Keywords: Animal experiment of surgery; Teach; Learn; Comprehensive quality

External science is a clinical problem with strong theory and practice. Experimental teaching of surgical science is an important link in practical teaching, a bridge course from theory to practice for medical students, a compulsory basic course for foreign science, and even an important tool for clinicians. Experimental teaching of surgical laboratory animals is also a course for students to learn aseptic technique and “three basic” operations, which lays a solid foundation for future clinical practice and study. In recent years, many colleges and universities pay more attention to students' practical teaching in training applied qualified skills and carrying out teaching reform. Teaching contents include: establishing aseptic concept company, training basic skills of surgical standards, professional ethics training, rigorous and pragmatic work style, team spirit of unity and cooperation, etc., which will have a positive and far-reaching impact on future construction and development of medical disciplines. This paper summarizes the experience of teaching animal experiments in surgical science in recent years.

1. The importance of surgical animal experiment teaching

Animal experimental teaching of surgical science is a fundamental problem combining theory with practice, an indispensable link of external science, a key to experimental teaching of surgical science and an index to measure teaching quality. To a certain extent, because of the trauma and risks of clinical surgery, it is impossible for patients to practice at the beginning of school, and only animal experiments can train them. Therefore, experimental animals are the main teaching assistants in experimental teaching of surgical science. The integration of basic skills such as anesthesia, sterility, incision, ligation, sewing and cutting has a strong consistency in animal experiment teaching, which increases students' interest in learning, increases students' chances of mastering skills and improves the utilization rate of animals. In animal experiment teaching class, students have a strong interest and curiosity in the first operation of living body, which plays a subtle guiding role in teachers' aseptic idea, operation method and professional ethics. Therefore, while teachers set an example seriously, students must strictly regulate the operation during the operation, always keep in mind the aseptic appearance, think seriously, rigorously and diligently, fully grasp the basic learning methods and practice the basic skills. For surgical errors, it is necessary to point out them in time, blame them for correction immediately, and organize learning methods. In this way, a solid foundation can be laid for training excellent surgical ability.

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doi: 10.18282/g.s.v2i1.1433

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2. The innovation of the teaching method of surgical animal experiment course

2.1 Pay attention to intuitive teaching methods

Surgical science and anatomy are closely related in medicine, and face to face is very strong. These two characteristics are necessary. Students should have strong application ability and skilled subject knowledge. Therefore, private teachers should not only teach basic theoretical knowledge, but also take students to carry out some basic practical operations and strengthen the combination of theory and practice. Not only that, but also taught some famous doctors to run video animation, which strengthened the theoretical image of students. In surgical practice, students must first see some surgical video clips, specific basic theories, surgical inspiration and operation specifications to the same students. In order to ensure that students complete animal surgery more smoothly, teachers should stand on the side of ordinary students' instruction in teaching, and improve the overall quality of teaching by further improving students' knowledge learning.

2.2 Professional ideological education and medical ethics infiltration for medical students

Surgical science is the basis of surgery, and every student needs to observe carefully, so as to carefully observe anesthesia, field skin preparation, brushing hands, bubbling hands, wearing surgical clothes, wearing sterile gloves, skin disinfection in the operating field, surgical towels and other preoperative preparations, arming, clamping, knotting, applying basic sewing methods and aseptic surgical procedures (such as service stations, standby equipment). Whether medical students can firmly establish the concept of sterility and master aseptic technique and basic surgical technique is an important basis for them to become excellent surgical talents in the future. Therefore, in the teaching process of animal surgery, the importance of aseptic technique in operation should be emphasized repeatedly. The importance of aseptic operation for students should be strengthened by washing hands before operation, wearing aseptic operation clothes, disinfecting skin in experimental animal operation area, napkin, skin cutting, operation and abdominal skin closure. It is also necessary to strengthen the cultivation of students and pay attention to the concept of wound. This kind of intestine is not sutured well, and then cut off a part and sutured again. This kind of surgical application is very unsatisfactory. At the same time, students should be severely criticized and educated to let them know that it is possible to reproduce bad behaviors on animals in the future. Students have reason to share the world with human beings, so as to fully realize that experimental animals are our scapegoats, their right to live together, and sacrifice for human medical cause. Without them, most of our research on human diseases will be impossible. Students should also try to drug experimental animals on the spot during the operation, so that animals can also be loved by health workers in the body under painless operation. During the operation, the movement should be gentle and careful, completely stop bleeding, keep the visual acuity clean, prevent unnecessary damage to organs, blood vessels and nerves, and prohibit extensive operation. Through the application of animal surgery, students can feel all the difficulties and responsibilities of medical work, restore their desire for knowledge and work, create a scientific and rigorous working attitude, develop good professional behaviors and habits, and work style of discipline, unity and cooperation.

2.3 Pay attention to the details in practical teaching

In the special surgical animal experiment class, every teaching detail must be basically controlled to ensure the completion of teaching tasks. The most important thing is the safety of students. In animal experiment teaching, both animals and students must ensure their own safety and avoid some potential safety hazards from anesthesia to the end of surgery. For example, animals may not be anesthetized, which may harm students; In the special experimental process, teachers even need to correct students' incorrect working methods to prevent mechanical damage or students' injury. Teachers and teachers use popular humorous language to innovate traditional surgical science, stimulate students' learning enthusiasm, understand students, master them and realize the consolidation of teaching influence. Students can also study better and lay the foundation for their future career.

2.4 Pay attention to the student foundation in practical teaching

In this way, teaching enables medical students of different levels and specialties to learn surgery. Let basic medical students understand and master these basic skills, and develop the correct concept of sterility. For non-clinical students, this is a basic learning knowledge, while for clinical students, this is their future dietary skills. They must master the skills and correctly establish the concept of medical ethics. Students with different foundations can actively consult others in this kind of experimental teaching, cure their own defects and encourage students' emotional development.

2.5 Firmly establish the concept of sterility and strengthen the operation of aseptic technology

However, in surgery, only by firmly establishing the concept of sterility can we follow the principles and rules of sterility. Students who have just entered animal surgery often unconsciously violate the principle of aseptic surgery, such as wearing masks or washing hands after washing hands, unconsciously touching aseptic areas, even wearing sterile gloves, and then helping glasses, all of which show that the concept of sterility is not firmly established in their minds. In order to enhance students' concept of sterility, the basic points of aseptic operation and the importance of aseptic technique should be explained when teaching surgical animal experiments. In order to show the teacher, it also emphasizes the idea that students are always sterile from the beginning to the end of the operation, and has strict requirements for students. Some minor operations are not allowed to be corrected in time and explained carefully because of some minor mistakes. When evaluating the results, pay attention to the evaluation of aseptic technology, so that students can not forget the concepts of aseptic and aseptic technology, and always enter the mind of the operating room.

2.6 Cultivate students' good spirit of unity and cooperation

During the experimental animal surgery, each operation team asked each responsible staff to provide clear parts, and asked students to complete the preparation work before the operation according to aseptic technique. At the same time, we must overcome selfishness and carry forward the spirit of unity and let each student understand that the successful completion of an operation is not the credit of anyone, but the crystallization of all participants in the wisdom of unity and cooperation. The surgeon, assistant, equipment nurse and anesthesiologist cooperate with each other, do their own work well, finish every operation carefully, and record the post-operation operation well. It is also important to learn to observe and think about every important detail of the operation process, and exercise the spirit of unity and solidarity.

2.7 Teach students in accordance with their aptitude

Medical students have different teaching objectives and priorities at different levels and majors. For non-clinical students, the purpose of teaching is to help them understand and fundamentally master the basic skills of surgery and develop the correct concept of sterility. For clinical medical students, the requirements should be more serial, more skilled and more powerful than the concept of sterility. Facing students with different foundations, teaching methods should be adjusted according to students' basic level. Students with weak foundation should adopt the method of application guidance and detailed explanation, while students with good foundation can adopt the method of guidance and inspiration, so that all students can get the best learning effect.

2.8 Emphasize the training of surgical skills

There is a habitual process, so in the teaching of every experimental course, teachers should definitely ask students to work according to their aseptic requirements and the whole teaching process. In education, teachers must follow the rules of the operating room, such as wearing masks and hats, washing hands, changing shoes and entering the operating room. When students are found to have made mistakes, which should be pointed out and corrected in time, the correct operation of students' praise will deepen the impression. Qualified surgery is the premise of successful completion of surgery, and it is also the focus of surgical teaching. Teachers should correct and display mistakes in time when performing animal surgery, and combine them closely with the success of surgery and the survival of animals after surgery, so that students can learn the correct surgical methods.

3. Conclusion

The evaluation of the effect after operation guidance can not only evaluate students' "learning", but also evaluate teachers' "teaching". At the end of animal surgery teaching, we require students to record their role in surgery in detail, such as surgeon, assistant, tool nurse, anesthesiologist, etc., to analyze and summarize the surgical results, so that students can further enhance their impression of surgery and requirements, provide accurate feedback on the results of related surgery, and improve their ability to think independently, analyze comprehensively and express themselves. Teachers' function during operation should be standardized and their sense of sterility, unity and cooperation should be strong, so that students can firmly establish the concept of sterility, arrange the operation well, and have a good spirit of unity and cooperation.

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