

· 医学教育 ·

Practice and exploration of educational innovation in the teaching process of anatomy*

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In the advent of knowledge economy and information society, the society urgently needs talents with high-quality, creativity and comprehensive development. School education plays an extremely important role in educating creative innovation. As a result, the school becomes the main site for students to acquire knowledge, develop their character and create an atmosphere of innovation. The main task of medical education is to train high-quality, innovative medical talents. With the reform of medical education, how to implement educational innovation in the process of medical teaching has gradually attracted the educators' widespread attention^[1-2]. Our paper has studied the educational innovation in the teaching process combining years' teaching practice and has got great effect.

With the rapid development of science and technology, teaching mode has been changed from using chalks, charts and models to using the multimedia. But there are still some common problems in the teaching of anatomy. First, anatomy is a science which focuses on knowing the structure and development of normal humans from the morphological perspective. It exists 'three-many' phenomena, such as many terms, many structures and many difficult points, which results in the students under great learning task and pressure and lack of learning interest^[3]. Secondly, with the expansion of enrollment, teaching mode in small classes is changed into large classes. The theory teaching is separated from the experiment teaching. The interval time between the two is unreasonable. Because of some students' poor learning initiative, the situation has appeared that students mainly rely on teachers in experimental class. Beginners' fear to dead specimens, the pungent odor as well as written-based assessment methods result in students' neglect of anatomical experiments^[4]. Lastly, the teachers pay much attention to theory teaching, ignoring the students' learning and innovative ability. They always teach and the students always take notes in the whole class. They lose interest and only study hard before exams and quickly forget after exams. These phenomena completely violate the purpose of learning the curriculum.

1 Materials and methods

1.1 Improving the teachers' innovative concept In modern

society, medical knowledge develops rapidly, which promotes the update of teaching contents and curriculum reform and calls for lifelong education. Teachers become the ones who impart knowledge. They must adapt themselves to development of modern education to constantly learn new knowledge and update their knowledge structure. In teaching activities, the shift of teachers' attitudes is the key to the implementation of innovative education. If the concept of teachers does not change, it is impossible to cultivate a sense of innovation on the students. To implement a new teaching method requires teachers to have the courage to explore innovation. We regularly organize seminars and learn advanced teaching methods to enrich themselves and the teaching content to improve the teaching level. So every teacher will understand that he is the organizer, mentor, helper and evaluator for the students rather than the indoctrinator of knowledge, not to impose the awareness of teachers on students. When educational innovation is integrated into the teaching process, an innovative educational environment has been created for students. This further improves the sense of responsibility and dedication of teachers, which gradually promote teachers to form an excellent army with perfect ideas, teaching experience and strong innovation.

1.2 Innovative teaching mode We use modern teaching methods to stimulate students' creative thinking^[5]. We have built ten interactive digital anatomy labs and a campus network teaching platform. We have transformed the anatomy teaching into a three-dimensional mode with texts, images and sounds including multimedia teaching, multimedia network teaching and experimental teaching. These can transform the abstract concepts and theories into intuitive, concrete and vivid ones, which create a lively classroom atmosphere and fully mobilize the enthusiasm of students. Theory and experiment integration teaching mode solves the problem of the separation of teaching and learning. As the enrollment is expanding, other departments have changed to have theoretical classes in a large whole class and experimental classes in small units. But we still insist to theory and experiment integration teaching mode in small units. Because of small number students, we can stand in students and show the structure clearly. This can not only nar-

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row the distance between teachers and students but also enhance the students' cognitive ability. Teachers can combine the theoretical knowledge with sample models, which can enable students to understand the structures of human body vividly and easily. The transition of teaching mode from "teacher-centered" to "student-centered" can stimulate students' subjective initiative. The students' motivation, emotion and will play a decisive role on the learning effect. The aim of education is to teach the students how to acquire knowledge and use the accepted knowledge to analyze and solve practical problems. Students' active learning should be emphasized in teaching. Teachers should focus on "fishing" rather than "fish" and train students' innovative sense. We abandon the past teaching method of "teacher-centered" and adopt the mode with more flexible heuristics or case-based. The teaching methods make students become active participants, explorers, and collaborators. In the teaching process we give students inspired guidance and timely coaching and at last achieve the transformation of knowledge into capabilities. For example, when we lecture the hepatic portal venous system, we can begin with hepatic portal hypertension symptoms by the use of multimedia. The students can combine the teaching models to actively discuss the reason of the symptoms. Then we explain the composition, characteristics, the branches of the portal vein and traffic inosculation with the superior vena cava, etc. These can stimulate students to create a space of imagination, and then teachers do the summary and guide the correct result from the student's imagination, which can not only stimulate the students' curiosity and thirst for knowledge, but also give full play to students' imagination and get a lifetime benefit.

1.3 Innovating assessment model to objective evaluate the teaching activities Examination, an important part in the teaching process, is one important mean to evaluate the quality of teaching and to test the teaching effectiveness. We create assessment model through the formative system of evaluation and assessment. Students' achievement consists of the usual attendance, answering questions and discussion in class, assignments, laboratory evaluation, operations assessment, midterm exams and final exams, etc. Moreover, the score proportion of the theoretical and practical assessment in the exam coincides with the theoretical and practical credit hours. We pay attention to assessing students' practical ability and evaluate students' performance scientifically and fairly. This dynamic diversity of the examination system encourages students to pay much attention to his usual performance and the ability to understand and grasp knowledge. They gradually abandon the bad habits of memorizing mechanically before exams and forgetting quickly after exams. This assessment model can help us evaluate whether we achieve our teaching objectives by assessing the students' level of intelligence, innovation, entrepreneurial spirit and personality. Finally innovative assessment model helps us achieve teaching objectives and train high-quality medical students.

1.4 Laboratory culture innovation In recent years, in addi-

tion to our focus on innovation, we have also made measures in improving the teaching environment. We put special flowers that can absorb formaldehyde in the laboratories and aisles. Meanwhile, we hang various photos on the wall to show important events in our department. In the first class in every semester, we organize students to read the medical oath in front of Wang Hu-Xiang's statute. Wang Hu-Xiang was the fist chief in our department and devoted his body to our school. His moving story is used to encourage students and set a good example. We try our best to do beginners' psychological counseling, tell them that there are few of bacteria and viruses in specimens and let them understand the role of conversion between the "cadavers" and "teaching aids". When improving the teaching quality, we use humanistic external environment to educate students and arouse their curiosity about Anatomy. This enables students to overcome the psychological fear and creates a warm and harmonious atmosphere of learning environment.

2 Results and discussion

2.1 Enhancing the students' initiative to improve the quality of teaching In the teaching process, innovation on teaching mode has powerfully aroused the consciousness of students. In order to change "ask me to learn" into "I want to learn", we arrange some content for students to learn by themselves and ask students questions in the next class. We notice that when students learn by themselves, they can seize the key content more early and are better at discovering questions. Moreover, the ability of self-problem-solving is significantly improved. In recent grades, students show great difference in qualities and abilities in contrast to the previous students. They have clear learning objectives and solid basic knowledge so that they can do the job with skill and ease in the clinical learning. Clinical teachers have been given full recognition in the teaching process of anatomy.

2.2 Prompting students to form a noble character and create a good quality of professional ethics Anatomy is not only a special discipline but a tough specialty, such as the pungent odor of formaldehyde, the psychological conflict in the face of dead specimen, the dirty and tire for making specimens and so on. But strengthening the educational innovation in the teaching process can guide the students' thinking, cultivate their sentiment and shape their personality. This hard environment can exercise their will and educate students to form good character of no afraid of dirty and tire. It can also enhance students' sense of social responsibility and practical innovation, which further helps forge a generation with noble character and good professional ethics of medical personnel.

2.3 Helping to change the education concept of teachers and form a high-level teaching staff In the teaching process, teachers are the direct executors of education. In order to cultivate innovative talents, the most important thing is to strengthen the innovative concept of teachers. The teachers should lead and teach by personal example as well as verbal instruction. Through the series of measures, we have improved the teaching level and research capacity, which plays a positive(下转第 2678 页)

保成分血的新鲜输入。输注冷沉淀及血小板时应立即输注,且输注速度要快,以患者能耐受为限,以达到迅速止血目的。由于冷沉淀每单位少,需大量输注时,输血护士不得离开病床,应及时更换血袋,防止空气栓塞并随时观察止血效果及不良反应。如有条件可输注免疫球蛋白或行血浆置换疗法^[7]。

2 结 果

经过精心治疗及护理,2 例患者于入院 5 d 后瘀斑停止进展,1 例于 8 d 后瘀斑停止进展,20 d 后瘀斑处皮损基本消退,无肿胀疼痛及分泌物,病情好转出院。3 个月后随访,患者瘀斑皮损处有色素沉着斑,四肢功能基本恢复。

3 讨 论

爆发性紫癜属危、急、重症病例,病情复杂,除可致紫癜、皮肤坏死外,尚可发生多器官功能障碍。如不及时观察病情及早明确诊断,而进行有针对性的治疗,肢体易发生皮肤坏死而致截肢甚至死亡。因此应重点观察患者精神、体温、脉搏、呼吸、血压,特别是血压的变化。本文认为严密的病情观察、严格伤肢制动、加强对症支持疗法、正确的饮食指导、烧伤创面处理及有针对性的心理护理,对病情好转能起到积极作用,对病情的恢复能奠定坚实基础。爆发性紫癜属罕见病例,瘀斑扩散范围广,感染难以控制,进展迅速,患者及家属恐惧不安,认为是不治之症,对治疗抱怀疑态度,产生悲观绝望消极情绪,容易失去治疗信心。医护人员应更关心同情患者。

爆发性紫癜变化迅速,治疗棘手,抗感染仍是主要的治疗手段。早期抗病毒及活化蛋白 C、AT-Ⅲ 替代治疗有助于疾病恢复。早期及时有效使用抗生素可以使爆发性紫癜总体病死率大大降低。护理人员应了解抗感染药物的主要药理作用,准确执行医嘱,严格掌握配制要求,并观察患者用药后的反应。难治病例可用甲泼尼龙冲击治疗,以达到在短时间内迅速控制病情,减少不良反应。冲击疗法时因药物用量与体质量有关,应每日监测体质量、血压、血糖、体温变化,且严格掌握输注滴速,冲击中心脏监护,密切观察并记录血压、心率、心律等;同时予胃黏膜保护药物使用,注意观察大便颜色,必要时每解大便 1 次及时化验大便常规及隐血^[8],以便观察有无胃黏膜出血、应激性溃疡等并发症;注意观察有无血细胞异常、电解质紊乱,特别是低血钾等症发生。询问有无四肢无力、恶心、食欲缺乏、心悸、夜尿增多等主诉。重视患者述说的任何不适并报告,查找相应原因并及时处理。人 C 蛋白浓缩物是预防和治疗爆发性紫癜的首选药物。爆发性紫癜患者血浆中 C 蛋白活性降低,应保持 C 蛋白活性水平谷值大于 25%。首次使用 C

蛋白浓缩物应在有经验的医师监护下应用,有条件者可行 C 蛋白活性测定,从而对评估爆发性紫癜病情及疗效有指导意义^[9]。根据患者 C 蛋白缺乏的严重程度、年龄、病理生理状态和血浆 C 蛋白水平确定用药剂量、给药频次和持续用药时间,观察其毒副作用如血栓形成、头晕、皮疹、低血压等^[10]。另外,应用有效的血液成分治疗爆发性紫癜的主要手段,血液制品对症支持极为重要。

总之,爆发性紫癜病情险恶,发展迅速,病例少见,尚缺乏经验参考,无固定治疗方案,只能是探索性治疗。给治疗和护理带来极大的挑战。如治疗和护理不到位,患者可迅速进入休克状态、昏迷、身体多系统衰竭而终至死亡。因此,做好严密的生命监测,加强对症支持疗法,有针对性的心理护理,正确及时执行医嘱及各项护理操作规程,有利于控制病情,降低病死率,最大程度恢复健康,减少并发症,促进患者康复回归社会。

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role in promoting the formation of high level teaching and research team with an educational innovation. This can also further promote the changing pattern of education and strengthen the consciousness of education. In summary, innovative education in teaching process of anatomy plays a pivotal role. We will continue to try our best to enhance our overall quality, constantly explore ways to improve teaching quality, accumulate teaching experience, and foster excellent talent with strong sense of innovation and innovation potential.

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