

Clinical Anatomy

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(1) Outline

Department of Clinical Anatomy supports clinical medicine through formulation of human anatomical and developmental biological bases of diagnoses and surgical procedures. We handle the whole body in human anatomical researches. We think it is classic but important to represent human morphology for exactly what they are based on meticulous observations of human body structures regardless of diagnostic technics and surgical procedures. Our researches are aimed to share languages among all clinicians based on clinical anatomy by describing the results of observations in an accessible way for clinicians. In addition, we perform analyses using experimental embryological approaches and developmental biological approaches, because we think it is important to consider how human structures are constructed.

(2) Research

- 1) Clinical anatomic study of the shoulder joint and rotator cuff.
- 2) Clinical anatomic study of the anal region for the rectoanal surgery.
- 3) Cadaveric study of the female pelvis for the gynecologic oncology and colposcopy.
- 4) Analyses of the lamination in the masticatory muscles with special reference of nerve supply.
- 5) Embryological study of the differentiation of cloaca and surrounding muscles.

(3) Education

Clinical anatomy is generally considered as the practical application of anatomical knowledge to diagnosis and treatment, however we think that this course is a part of pure anatomical science based on the findings of the morphological observations of the human bodies. Main objective of Clinical anatomy in the graduate course is to make detailed anatomical data to answer the questions developed from clinical fields especially by surgeons and radiologists. We collaborate with many clinicians: ENT, orthopedics, gynecology, thoracic surgery, radiology

and so on, and our projects have been broad areas. Students are expected to get fine dissection techniques of human bodies and also learn techniques of histology and embryological experiments. By using these techniques, we study the spatial relationships of organs, vessels nerves, and also try to examine their developmental processes in various projects.

(4) Lectures & Courses

Theories and hypotheses of morphogenesis derived from descriptive anatomy and descriptive biology have been confirmed and modified by experimental biology. Furthermore, progresses of developmental biology identified molecules and signaling pathways involved in the morphogenesis. Progresses in the developmental biology also verified morphological hypotheses, and added revisions to the morphological models. The postulates of the morphological models which are currently investigated were built and completed by Anatomy. However, we find Anatomy is still not completed and has many obscure issues through careful dissection of human body. It might be thought that everything was done and there could be no new finding in the human anatomical field anymore because the anatomy employs the classic procedures such as the gross anatomy. However, there are still a lot of unclear anatomy topics, because they had not been focused and not investigated with their clinical significances.

(5) Publications

[Original Articles]

1. Tsutsumi M, Nimura A, Akita K. The Gluteus Medius Tendon and Its Insertion Sites: An Anatomical Study with Possible Implications for Gluteus Medius Tears. *The Journal of bone and joint surgery. American volume.* 2019.01; 101(2); 177-184
2. Kentaro Amaha, Akimoto Nimura, Reiko Yamaguchi, Natnicha Kampan, Atsushi Tasaki, Kumiko Yamaguchi, Ryuichi Kato, Keiichi Akita. Anatomic study of the medial side of the ankle base on the joint capsule: an alternative description of the deltoid and spring ligament. *J Exp Orthop.* 2019.01; 6(1); 2
3. Itsuko Okuda, Naoki Yoshioka, Yukio Shirakabe, Keiichi Akita. Basic analysis of facial ageing: The relationship between the superficial musculoaponeurotic system and age. *Exp. Dermatol.* 2019.02; 28 Suppl 1; 38-42
4. Takuya Higashino, Mutsumi Okazaki, Hiroki Mori, Kumiko Yamaguchi, Keiichi Akita. Reply: Microanatomy of Sensory Nerves in the Upper Eyelid: A Cadaveric Anatomical Study. *Plast. Reconstr. Surg.* 2019.02; 143(2); 437e-438e
5. Koji Fujita, Kenji Kimori, Akimoto Nimura, Atsushi Okawa, Yoshikazu Ikuta. MRI analysis of carpal tunnel syndrome in hemodialysis patients versus non-hemodialysis patients: a multicenter case-control study. *J Orthop Surg Res.* 2019.03; 14(1); 91
6. Hisayo Nasu, Phichaya Baramée, Natnicha Kampan, Akimoto Nimura, Keiichi Akita. An anatomic study on the origin of the long head of the triceps brachii. *JSES Open Access.* 2019.03; 3(1); 5-11
7. Yoshie Tanabe, Kazunori Yasuda, Eiji Kondo, Yasuyuki Kawaguchi, Keiichi Akita, Tomonori Yagi. Comparison of Graft Length Changes During Knee Motion Among 5 Different Anatomic Single-Bundle Anterior Cruciate Ligament Reconstruction Approaches: A Biomechanical Study. *Orthop J Sports Med.* 2019.03; 7(3); 2325967119834933
8. Shota Hoshika, Akimoto Nimura, Reiko Yamaguchi, Hisayo Nasu, Kumiko Yamaguchi, Hiroyuki Sugaya, Keiichi Akita. Medial elbow anatomy: A paradigm shift for UCL injury prevention and management. *Clin Anat.* 2019.04; 32(3); 379-389
9. Muro S., Tsukada Y., Harada M., Ito M., Akita K.. Anatomy of the smooth muscle structure in the female anorectal anterior wall: convergence and anterior extension of the internal anal sphincter and longitudinal muscle *COLORECTAL DISEASE.* 2019.04; 21(4); 472-480
10. Asumi Midorikawa, Liangcheng Wang, Tomoyuki Kuwata, Yoshie Taniguchi, Isao Horiuchi, Chikako Matsushita, Kenro Chikazawa, Kenjiro Takagi. Management of pregnancy complicated by ankylosing spondylitis: A case report and literature review. *Clin Case Rep.* 2019.04; 7(4); 766-769

11. Sachi-yuki Tsukada, Kenji Kurosaka, Tetsuyuki Maeda, Akihiro Iida, Masahiro Nishino, Naoyuki Hirasawa. Early stage periarticular injection during total knee arthroplasty may provide a better postoperative pain relief than late-stage periarticular injection: a randomized-controlled trial. *Knee Surg Sports Traumatol Arthrosc.* 2019.04; 27(4); 1124-1131
12. Tomoyuki Kuroiwa, Megumi Matsumoto, Ryuji Kato, Akimoto Nimura, Toshitaka Yoshii, Atsushi Okawa, Koji Fujita. Activation of cancer-related and mitogen-activated protein kinase signaling pathways in human mature osteoblasts isolated from patients with type 2 diabetes. *Bone Rep.* 2019.06; 10; 100199
13. Natnicha Kampan, Keiichi Akita, Pasuk Mahakkanukrauh. The malaris muscle concept reconsidered. *Anat Cell Biol.* 2019.06; 52(2); 134-139
14. Masayoshi Saito, Sachi-yuki Tsukada, Nobuko Fujita, Mahbubur Rahman, Wataru Morita, Nobuto Kitamura, Atsushi Tasaki. Post-operative pain control following arthroscopic rotator cuff repair: peri-articular injection versus interscalene brachial plexus block. *Int Orthop.* 2019.06; 43(6); 1435-1441
15. Yasunori Tataru, Hisayo Nasu, Masahiro Tsutsumi, Keiichi Akita. Origins, Courses, and Distributions of the Lumbar Arterial Branches in Relation to the Spinal Nerves: An Anatomical Study. *Spine.* 2019.07; 44(14); E808-E814
16. Kenji Ibukuro, Masaya Mori, Keiichi Akita. The hepatic capsular arteries: imaging features and clinical significance. *Abdom Radiol (NY).* 2019.08; 44(8); 2729-2739
17. Ken Imai, Kenro Chikazawa, Liangcheng Wang, Tomoyuki Kuwata. A Gauze-tying Trocar Technique for Laparoscopic Hysterectomy Procedures Involving Large Uteri. *Gynecol Minim Invasive Ther.* 2019.08; 8(3); 138-139
18. Tsutsumi M, Nimura A, Honda E, Utsunomiya H, Uchida S, Akita K. An Anatomical Study of the Anterosuperior Capsular Attachment Site on the Acetabulum. *The Journal of bone and joint surgery. American volume.* 2019.09; 101(17); 1554-1562
19. Fujita Koji, Watanabe Takuro, Kuroiwa Tomoyuki, Sasaki Toni, Nimura Akimoto, Sugiura Yuta. A Tablet-Based App for Carpal Tunnel Syndrome Screening: Diagnostic Case-Control Study *JMIR MHEALTH AND UHEALTH.* 2019.09; 7(9); e14172
20. Tomoyuki Kuroiwa, Akimoto Nimura, Shiro Suzuki, Toru Sasaki, Atsushi Okawa, Koji Fujita. Measurement of thumb pronation and palmar abduction angles with a small motion sensor: a comparison with Kapandji scores. *J Hand Surg Eur Vol.* 2019.09; 44(7); 728-733
21. Shiho Oide, Tomoyuki Kuwata, Liangcheng Wang, Ken Imai, Kenro Chikazawa, Isao Horiuchi, Kenjiro Takagi, Ryo Konno. Incidence of residual bacterial contamination of transvaginal ultrasound probes. *J Med Ultrason (2001).* 2019.10; 46(4); 475-479
22. Kohtaro Eguchi, Toshihiro Matsui, Masayoshi Mukai, Taro Sugimoto. Prediction of the depth of invasion in superficial pharyngeal cancer: Microvessel morphological evaluation with narrowband imaging. *Head Neck.* 2019.11; 41(11); 3970-3975
23. Kohtaro Eguchi, Jason Y K Chan, Ichiro Tateya, Akira Shimizu, F Christopher Holsinger, Taro Sugimoto. Curved Laryngopharyngoscope With Flexible Next-Generation Robotic Surgical System for Transoral Hypopharyngeal Surgery: A Preclinical Evaluation. *Ann. Otol. Rhinol. Laryngol.* 2019.11; 128(11); 1023-1029
24. Shiho Oide, Tomoyuki Kuwata, Liangcheng Wang, Ken Imai, Kenro Chikazawa, Kenjiro Takagi. Placental mesenchymal dysplasia with a good outcome: A case report. *J. Obstet. Gynaecol. Res.* 2019.11; 45(11); 2284-2288
25. Toru Sasaki, Shigenori Kawabata, Yuko Hoshino, Kensuke Sekihara, Yoshiaki Adachi, Miho Akaza, Isamu Ozaki, Koji Fujita, Akimoto Nimura, Toshitaka Yoshii, Yuki Miyano, Yuki Mitani, Taishi Watanabe, Shinji Sato, Sukchan Kim, Atsushi Okawa. Visualization of electrophysiological activity at the carpal tunnel area using magnetoneurography. *Clin Neurophysiol.* 2019.12;

[Books etc]

1. Akimoto Nimura, Keiichi Akita, Hiroyuki Sugaya. *DISORDERS OF THE ROTATOR CUFF AND BI-CEPS TENDON.* ELSEVIER, 2019.10 (ISBN : 978-0-323-28784-5)

[Conference Activities & Talks]

1. Keiichi Akita. Clinical Anatomy of Anus and Rectum. Song-Do International Proctology Symposium 2019.04.20 Soul, Korea
2. Keiko Fukino, Masahiro Tsutsumi, Akimoto Nimura, Jose Sanudo, Takashi Ono, Keiichi Akita. Spatial distribution of the palatopharyngeus in consideration of the role of the swallowing. International Congress of Anatomia Clinica 2019.06.24 Madrid, Spain
3. Keiichi Akita. Recent Works of Pelvic Floor Anatomy: Spatial Distributions of Skeletal and Smooth Muscular Tissues. International Congress of Anatomia Clinica 2019.06.24 Madrid, Spain
4. Haruka Eishi, Kumiko Yamaguchi, Yoshihiro Hiramatsu, Keiichi Akita. Intramural distribution of the arteries in the stomach Demonstrated by X-ray examination with barium contrast medium injected. International Congress of Anatomia Clinica 2019.06.24 Madrid, Spain
5. Satoru Muro, Maika Habu, Hiromasa Ka, Ryuzaburo Kagawa, Masayo Harada, Keiichi Akita. Coexistence of dense and sparse areas in longitudinal smooth muscle of the anal canal inspired by MRI. International Congress of Anatomia Clinica 2019.06.25 Madrid, Spain
6. Masahiro Tsutsumi, Akimoto Nimura, Eisaburo Honda, Hajime Utsunomiya, Soshi Uchida, Keiichi Akita. Morphological analysis of the hip capsular attachment on the anterosuperior acetabular margin. International Congress of Anatomia Clinica 2019.06.26 Madrid, Spain
7. Akimoto Nimura, Masahiro Tsutsumi, Satoru Muro, Keiichi Akita . Anatomical relationship between the morphology of the styloid process of the ulna and Radioulnar ligament attachment. International Congress of Anatomia Clinica 2019.06.26 Madrid, Spain
8. Kumiko Yamaguchi, Nobutoshi Nawa, Keiichi Akita. Utilization and effects of learning materials in human anatomy course. International Congress of Anatomia Clinica 2019.06.26 Madrid, Spain
9. Sritara Sasin, Masahiro Tsutsumi, Keiko Fukino, Takashi Ono, Keiichi Akita. Morphological analysis of the lateral pterygoid muscle inserting into the medial surface of the condylar process. The 6th Asian Academy congress for TMJ 2019.07.27 Tokyo, Japan
10. Hisayo Nasu, Akimoto Nimura, Keiichi Akita. Supporting structures in the lateral side of the knee. The 19th congress of the International Federation of Associations of Anatomists 2019.08.09 London, UK
11. Mina Nakagawa, Kanako Noritake, Kumiko Yamaguchi, Janelle Moross, Jun Tsuruta, Keiichi Akita. Introduction of Clinical Exchange Training for Medical and Dental Students. The Association for Medical Education in Europe 2019 2019.08.26 Vienna, Austria
12. Keiichi Akita. Clinical Anatomy of Masticatory muscles and Pharyngeal muscles. Lecture for Department of Otolaryngology (ENT) 2019.08.26 Bangkok, Thailand
13. Keiichi Akita. Clinical Anatomy of Pelvic Floor Muscles and Anorectal Canal. Lecture for OB & GYN doctors 2019.08.26 Bangkok, Thailand
14. Kumiko Yamaguchi, Nobutoshi Nawa, Chiharu Kawakami, Mina Nakagawa, Jun Tsuruta, Keiichi Akita. How other disciplines influence team members during multi-disciplinary decision making. The Association for Medical Education in Europe 2019 2019.08.27 Vienna, Austria
15. Chiharu Kawakami, Kumiko Yamaguchi, Nobutoshi Nawa, Mina Nakagawa, Jun Tsuruta, Keiichi Akita. Promoting student contribution at Interprofessional Education workshops - differences among eight health professions. The Association for Medical Education in Europe 2019 2019.08.27 Vienna, Austria
16. Nobutoshi Nawa, Kumiko Yamaguchi, Chiharu Kawakami, Mina Nakagawa, Jun Tsuruta, Keiichi Akita. Differences in effects of interprofessional education workshops by students ' discipline and gender among medical and dental students. The Association for Medical Education in Europe 2019 2019.08.27 Vienna, Austria
17. Keiichi Akita. Introduction to Anatomy Such Importance Basic for Doctor. Lecture at Faculty of Science 2019.08.27 Bangkok, Thailand

18. Keiichi Akita. Clinical Anatomy of Shoulder joint with special reference to Rotator cuff muscles Femoral and Tibial Attachments of ACL and PCL. Lecture at Department of Orthopedics 2019.08.27 Bangkok, Thailand
19. Keiichi Akita. Surgical Anatomy of Anorectal region. Lecture for General Surgery residents and Medical students 2019.08.28 Bangkok, Thailand
20. Satoru Muro, Keiichi Akita. Anatomy of the smooth muscle structure in the region anterior to the anorectum in male. Standard Surgical Treatment of Colorectal Cancer Workshop 2019.11.09 Seoul, Korea
21. Satoru Muro, Keiichi Akita. Anatomical concept specific to the anorectum: proximity and association of smooth and skeletal muscles. Standard Surgical Treatment of Colorectal Cancer Workshop 2019.11.09 Seoul, Korea
22. Akimoto Nimura. Shoulder Anatomy. 2nd Asia-Pacific Shoulder and Elbow Symposium 2019.11.30 Bunkyo-ku, Tokyo