

# Clinical Anatomy

Professor : Keiichi AKITA

Professor : Akimoto NIMURA (Department of Functional Joint Anatomy)

Junior Associate Professor : Kumiko YAMAGUCHI (Institute of Education Curricular Management Division)

Junior Associate Professor : Kouji FUJITA (Department of Functional Joint Anatomy) (April ~)

Assistant Professor : Masayo HARADA

Assistant Professor : Hisayo NASU (~ March)

Assistant Professor : Satoru MURO (April ~)

Research Technician : Masahiro TSUTSUMI

Staff Assistant : Kaoru SUZUKI

Parttime Lecturer : Kenji IBUKURO, Itsuko OKUDA, Sachi-yuki TSUKADA, Masataka NAKAZAWA, Kaoru KITSUKAWA, Tomoyuki YANO, Kenro CHIKAZAWA, Shirou SUZUKI (April ~)

Graduate Student : Janyaruk SURİYUT (~ March), Eiichirou KAGAWA,

Kohtarō EGUCHI, Saya HORIUCHI, Yusuke UEDA, Atsuhiko OCHI (~ Sept.), Souichi HATTORI,

Koh MIWA, Syuusaku HOSONO, Haruka EISHI, Wachirawit SIRIRAT, Shouko MOUE,

Ming Yan HE, Areeya JIAMJUNYASIRI, Atsuhiko FUKAI, Tharnmanularp SUTHASINEE,

Ryo KARAKAWA (April ~), Hidehiko YOSHIMATU (April ~)

Research student : Mamiko SUZUKI (~ March)

## (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. Hattori S, Nimura A, Koyama M, Tsutsumi M, Amaha K, Ohuchi H, Akita K. Dorsiflexion is more feasible than plantar flexion in ultrasound evaluation of the calcaneofibular ligament: a combination study of ultrasound and cadaver Knee Surgery Sports Traumatology Arthroscopy. 2020.01; 28(1); 262-269
2. Phichaya Baramée, Satoru Muro, Janyaruk Suriyut, Masayo Harada, Keiichi Akita. Three muscle slings of the pelvic floor in women: an anatomic study. Anat Sci Int. 2020.01; 95(1); 47-53
3. Lu Zhao, Koji Makino, Koji Fujita, Toru Sasaki, Nobutaka Sato, Kazuki Yamada, Kensuke Koyama, Hiroataka Haro, Hidetsugu Terada. High-Accuracy Finger Force Distribution Measurement System with Precision Calibration Function 2020 IEEE/SICE International Symposium on System Integration. 2020.01;
4. Kohtaro Eguchi, Shigeo Kawai, Masayoshi Mukai, Hiroaki Nagashima, Satoshi Shirakura, Taro Sugimoto, Takahiro Asakage. Medial lingual lymph node metastasis in carcinoma of the tongue. Auris Nasus Larynx. 2020.02; 47(1); 158-162
5. Hoshika S, Nimura A, Takahashi N, Sugaya H, Akita K. Valgus stability is enhanced by flexor digitorum superficialis muscle contraction of the index and middle fingers. J Orthop Surg Res. 2020.03; 15(1); 121
6. Kenro Chikazawa, Ken Imai, Takaki Ito, Azusa Kimura, K O Hiroyoshi, Yokota Miho, Tomoyuki Kuwata, Ryo Konno. Pegfilgrastim Maintains Relative Dose Intensity and Decreases Hospitalisations in Patients With Endometrial Cancer. In Vivo. 2020.03; 34(6); 3669-3673
7. Kawabata A, Nimura A, Fujita K, Ishii S, Okawa A. Locking of the Distal Radioulnar Joint Caused by Dorsal Tear of the Triangular Fibrocartilage Complex A Case Report JBJS Case Connector. 2020.04; 10(2); e0143
8. Harada Masayo, Akita Keiichi. Mouse fibroblast growth factor 9 N143T mutation leads to wide chondrogenic condensation of long bones HISTOCHEMISTRY AND CELL BIOLOGY. 2020.04; 153(4); 215-223
9. Yuki Tsuruta, Ryo Karakawa, Koya Majima, Satoru Yamamoto, Tomoyoshi Shibata, Hidehiko Yoshimatsu, Hiroki Miyashita, Kenta Tanakura, Tomoyuki Yano. The Reconstruction after a Giant Phyllodes Tumor Resection Using a DIEP Flap. Plast Reconstr Surg Glob Open. 2020.04; 8(4); e2760
10. Tsutsumi M, Nimura A, Akita K. New insight into the iliofemoral ligament based on the anatomical study of the hip joint capsule. Journal of anatomy. 2020.05; 236(5); 946-953

11. Satoru Muro, Ryuzaburo Kagawa, Maika Habu, Hiromasa Ka, Masayo Harada, Keiichi Akita. Coexistence of Dense and Sparse Areas in the Longitudinal Smooth Muscle of the Anal Canal: Anatomical and Histological Analyses Inspired by Magnetic Resonance Images. *Clin Anat.* 2020.05; 33(4); 619-626
12. Tempei Sato, Kensuke Kataoka, Yoshiaki Ito, Shigetoshi Yokoyama, Masafumi Inui, Masaki Mori, Satoru Takahashi, Keiichi Akita, Shuji Takada, Hiroe Ueno-Kudoh, Hiroshi Asahara. Lin28a/let-7 pathway modulates the Hox code via Polycomb regulation during axial patterning in vertebrates *Elife.* 2020.05; 9;
13. Yoko Ohishi, Aki Mitsuda, Kozue Ejima, Hidetomo Morizono, Tomoyuki Yano, Masahiro Yokoyama, Kengo Takeuchi, Mutsunori Fujiwara, Tetsuo Nemoto, Toshiharu Minabe. Breast implant-associated anaplastic large-cell lymphoma: first case detected in a Japanese breast cancer patient. *Breast Cancer.* 2020.05; 27(3); 499-504
14. Ryo Karakawa, Tomoyuki Yano, Hidehiko Yoshimatsu, Hideyuki Katsuta, Yukiomi Kushihashi, Toshikazu Shimane. Computer-aided Design and Syringe-aided Manufacturing for Mandibular Reconstruction Using a Vascularized Fibula Flap. *Plast Reconstr Surg Glob Open.* 2020.05; 8(5); e2819
15. Janyaruk Suriyut, Satoru Muro, Phichaya Baramee, Masayo Harada, Keiichi Akita. Various significant connections of the male pelvic floor muscles with special reference to the anal and urethral sphincter muscles. *Anat Sci Int.* 2020.06; 95(3); 305-312
16. Kohtaro Eguchi, Satoru Muro, Koh Miwa, Kumiko Yamaguchi, Keiichi Akita. Deep cervical fascia as an anatomical landmark of lingual lymph nodes: An anatomic and histologic study. *Auris Nasus Larynx.* 2020.06; 47(3); 464-471
17. Yutaka Tokairin, Yasuaki Nakajima, Kagami Nagai, Kumiko Yamaguchi, Keiichi Akita, Yusuke Kinugasa. Aortic inflation with agar injection is a useful method of cadaveric preparation which creates a mediastinal anatomy that better mimics the living body for surgical training. *Gen Thorac Cardiovasc Surg.* 2020.06; 68(6); 652-654
18. Hosono S, Fujita K, Nimura A, Akita K. Release of cervical muscular tension improved severe pruritus in moderate-to-severe atopic dermatitis: A case series. *JAAD case reports.* 2020.06; 6(6); 510-513
19. Satoru Yamamoto, Tomoyuki Yano, Gen Furubayashi, Masayuki Sawaizumi. A Labia Majora Sharing Perforator Flap for Labial Defect Reconstruction. *Plast Reconstr Surg Glob Open.* 2020.06; 8(6); e2931
20. Toshikazu Kimura, Tomoyuki Yano, Atsuya Akabane. Temporo-parietal muscle pedicle flap for reconstruction of the anterior skull base after resection of recurrent olfactory groove meningioma: a technical note. *Br J Neurosurg.* 2020.06; 1-4
21. Kenro Chikazawa, Ken Imai, Liangcheng Wang, Tomoyuki Kuwata, Ryo Konno. A cystectomic technique with low risk of rupture for women with benign ovarian cyst. *J Obstet Gynaecol.* 2020.06; 1-3
22. Shin Takenaka, Kenro Chikazawa, Eri Yoshiizumi, Yusuke Hirose, Masato Tamate, Ken Nakayama, Miki Morioka, Akihiko Sekizawa, Koji Matsumoto. Three-Dimensional Peripheral Bloodstream Model of the Uterus for Laparoscopic Radical Hysterectomy. *J Minim Invasive Gynecol.* 2020.07; 27(5); 1196-1202
23. Sasaki T, Makino K, Nimura A, Suzuki S, Kuroiwa T, Koyama T, Okawa A, Terada H, Fujita K. Assessment of grip-motion characteristics in carpal tunnel syndrome patients using a novel finger grip dynamometer system. *Journal of orthopaedic surgery and research.* 2020.07; 15(1); 245
24. Kuroiwa T, Nimura A, Takahashi Y, Sasaki T, Koyama T, Okawa A, Fujita K. Device Development for Detecting Thumb Opposition Impairment Using Carbon Nanotube-Based Strain Sensors. *Sensors (Basel, Switzerland).* 2020.07; 20(14);
25. Fujita Koji, Iijima Hirotaka, Eguchi Ryo, Kuroiwa Tomoyuki, Sasaki Toru, Yokoyama Yukihiro, Koyama Takafumi, Nimura Akimoto, Kato Ryuichi, Okawa Atsushi, Takahashi Masaki. Gait analysis of patients with distal radius fracture by using a novel laser Timed Up-and-Go system *GAIT & POSTURE.* 2020.07; 80; 223-227
26. Ochi A, Muro S, Adachi T, Akita K. Zoning inside the renal fascia: The anatomical relationship between the urinary system and perirenal fat. *International journal of urology : official journal of the Japanese Urological Association.* 2020.07; 27(7); 625-633

27. Kenya Kobayashi, Fumihiko Matsumoto, Yasuji Miyakita, Masaki Arikawa, Go Omura, Satoko Matsumura, Atsuo Ikeda, Azusa Sakai, Kohtaro Eguchi, Yoshitaka Narita, Satoshi Akazawa, Shimpei Miyamoto, Seiichi Yoshimoto. Risk Factors for Delayed Surgical Recovery and Massive Bleeding in Skull Base Surgery. *Biomed Hub*. 2020.07; 5(2); 87-100
28. Kenro Chikazawa, Sachiko Netsu, Ken Imai, Aya Ishiguro, Azusa Kimura, Liangcheng Wang, Tomoyuki Kuwata, Ryo Konno. Nedaplatin use in patients with hypersensitivity reaction episodes to carboplatin. *Taiwan J Obstet Gynecol*. 2020.07; 59(4); 546-550
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31. Keiichi Akita. Abstracts presented at the meeting of the 23rd Congress of the Japanese Research Society of Clinical Anatomy. *Surg Radiol Anat*. 2020.08; 1517-1525
32. Kato MK, Muro S, Kato T, Miyasaka N, Akita K. Spatial distribution of smooth muscle tissue in the female pelvic floor and surrounding the urethra and vagina. *Anatomical science international*. 2020.09; 95(4); 516-522
33. Nasu H, Nimura A, Yamaguchi K, Akita K. Morphology of the anterolateral ligament: a complex of fibrous tissues spread to the anterolateral aspect of the knee joint. *Anatomical science international*. 2020.09; 95(4); 470-477
34. Koh-Ichi Yamaki, Keiichi Akita. Abstracts presented at the Joint meeting of the 22nd Congress of the Japanese Research Society of Clinical Anatomy and the 3rd Congress of Kurume Research Society of Clinical Anatomy. *Surg Radiol Anat*. 2020.09; 1393-1403
35. Itsuko Okuda, Yumika Yamakawa, Nobu Mitani, Naoko Ota, Marie Kawabata, Naoki Yoshioka. Objective evaluation of the relationship between facial expression analysis by the facial action coding system (FACS) and CT/MRI analyses of the facial expression muscles. *Skin Res Technol*. 2020.09; 26(5); 727-733
36. Ryo Karakawa, Hidehiko Yoshimatsu, Kenta Tanakura, Hiroki Miyashita, Tomoyoshi Shibata, Yukiko Kuramoto, Tomoyuki Yano. An anatomical study of the lymph-collecting vessels of the medial thigh and clinical applications of lymphatic vessels preserving profunda femoris artery perforator (LpPAP) flap using pre- and intraoperative indocyanine green (ICG) lymphography. *J Plast Reconstr Aesthet Surg*. 2020.09; 73(9); 1768-1774
37. Miwa K, Tsutsumi M, Fukino K, Eguchi K, Okada R, Akita K. An anatomical study of the anterior wall of the hypopharyngeal and the cervical esophageal junction. *Auris, nasus, larynx*. 2020.10; 47(5); 849-855
38. Tomoyuki Yano, Ryo Karakawa, Hidehiko Yoshimatsu, Yuma Fuse, Tomoyoshi Shibata, Yukiko Kuramoto, Nobuko Suesada, Hiroki Miyashita. The Feasibility of Harvesting an Innervated Profunda Artery Perforator Flap for Breast Reconstruction. *Plast Reconstr Surg Glob Open*. 2020.10; 8(10); e3160
39. Akiko Ito, Kenya Kobayashi, Mika Shiotsuka, Tetsufumi Sato, Go Omura, Yoshifumi Matsumoto, Atsuo Ikeda, Azusa Sakai, Kohtaro Eguchi, Tomonari Takano, Fumihiko Matsumoto, Osamu Kobayashi, Satoshi Iwata, Seiichi Yoshimoto. Uniform infection screening allowed safe head and neck surgery during the coronavirus disease 2019 pandemic in Japan. *Jpn J Clin Oncol*. 2020.10;
40. Masanori Isobe, Yuki Kataoka, Kenro Chikazawa, Hiroshi Nishigori, Toshifumi Takahashi, Takayuki Enomoto. The number of overall hysterectomies per population with the perimenopausal status is increasing in Japan: A national representative cohort study. *J Obstet Gynaecol Res*. 2020.10; 46(12); 2651-2661
41. Sritara S, Tsutsumi M, Fukino K, Matsumoto Y, Ono T, Akita K. Evaluating the morphological features of the lateral pterygoid insertion into the medial surface of the condylar process. *Clinical and experimental dental research*. 2020.11;

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44. Kenro Chikazawa, Kuwata Tomoyuki. Why not use "Twitter" of core clinical journals for rapid dissemination of medical information during the COVID-19 pandemic? *Arch Gynecol Obstet*. 2020.11; 302(5); 1047-1048
45. Saya Horiuchi, Akimoto Nimura, Masahiro Tsutsumi, Shiro Suzuki, Koji Fujita, Taiki Nozaki, Keiichi Akita. Anatomical relationship between the morphology of the styloid process of the ulna and the attachment of the radioulnar ligaments. *J Anat*. 2020.12; 237(6); 1032-1039
46. Eiichiro Kagawa, Akimoto Nimura, Hisayo Nasu, Ryuichi Kato, Keiichi Akita. Fibrous Connection Between Cervical Nerve and Zygapophysial Joint and Implication of the Cervical Spondylotic Radiculopathy: An Anatomic Cadaveric Study. *Spine (Phila Pa 1976)*. 2020.12; Publish Ahead of Print;
47. Ryo Karakawa, Hidehiko Yoshimatsu, Erisa Maeda, Tomoyoshi Shibata, Kenta Tanakura, Yukiko Kuramoto, Hiroki Miyashita, Tomoyuki Yano. Use of the Profunda Femoris Artery Perforator Flap for Reconstruction after Sarcoma Resection. *Plast Reconstr Surg Glob Open*. 2020.12; 8(12); e3289
48. Soichi Hattori, Kentaro Onishi, Yuji Yano, Yuki Kato, Hiroshi Ohuchi, MaCalus V Hogan, Tsukasa Kumai. Sonographically Guided Anchor Placement in Anterior Talofibular Ligament Repair Is Anatomic and Accurate. *Orthop J Sports Med*. 2020.12; 8(12); 2325967120967322
49. Yusuke Kimura, Tsuneo Yamashiro, Yuki Saito, Kaoru Kitsukawa, Hisateru Niki, Hidefumi Mimura. MRI findings of spring ligament injury: association with surgical findings and flatfoot deformity. *Acta Radiol Open*. 2020.12; 9(12); 2058460120980145

### [Books etc]

1. Soichi Hattori. Ultrasound guided minimally invasive surgery for chronic lateral ligament injury of the ankle. 2020.05 (ISBN : 978-4-88117-788-4 C3047)
2. Soichi Hattori. Future of ultrasound guided surgery. 2020.05 (ISBN : 0557-0433)
3. Soichi Hattori. Lateral ligament injury of the ankle. 2020.10 (ISBN : 978-4-7849-5813-9)

### [Conference Activities & Talks]

1. Masahiro Tsutsumi, Akimoto Nimura, Keiichi Akita. Anatomy of the hip joint capsule for a better understanding of the hip stabilization. The 2nd Annual Congress of Asia Society of Hip Arthroscopy & Preservation 2020.04.05 Web
2. Kenji Ibukiro, Kenichiro Tago, Kazu Shibutani, Mariko Mizuno, Takahiro Miyachi, Misaki Shoji, Naohiro Sudo, Yusuke Toda, Jitsuro Tsukada, Masahiro Okada. The relationship between the clinical outcomes and the clinical and radiological findings in patients with pneumatosis intestinalis. ESGAR2020 2020.06.19 Web
3. Yusuke Ueda, Hiroyuki Sugaya, Norimasa Takahashi, Morihito Tokai, Takeshi Morioka, Shota Hoshika. Clinical and Radiographic Outcomes after Arthroscopic Iliac Bone Grafting for Traumatic Anterior Shoulder Instability with Significant Glenoid Bone Loss – A Minimum of Five-year Follow-up. AOSSM 2020 Annual Meeting 2020.07.13 Web
4. Ryo Karakawa. Profunda femoris Artery Perforator (PAP) flap: An anatomical study of the correlation of the perforators, the accessory saphenous vein, and the lymph collecting vessels and clinical applications of Lymphatic Vessels Preserving PAP (LpPAP) flap. JSPRS award of excellence 2020.08.26 Nagoya, Aichi

5. Naohiro Sudo, Jitsuro Tsukada, Kenji Ibukuro, Misaki Shoji, Takahiro Miyauchi, Kazu Shibutani, Kenichiro Tago, Mariko Mizuno, Takayuki Matsumoto, Yusuke Toda, Masahiro Okada. A successful embolization of closest upstream lymph-node using isocenter puncture (ISOP) technique under fluoroscopy for a patient with intractable postoperative lymphorrhea. . Cardiovascular and Interventional Radiological Society of Europe 2020 2020.09.12 Web
6. Tomoyuki Yano. Combined SIEA and SCIP double pedicle flap (SaS flap) for breast reconstruction. PRS Korea 2020 2020.11.13 Web
7. Ryo Karakawa. Profunda femoris Artery Perforator (PAP) flap: An anatomical study of the correlation of the perforators, the accessory saphenous vein, and the lymph collecting vessels and clinical applications of Lymphatic Vessels Preserving PAP (LpPAP) flap. PRS KOREA 2020 2020.11.13 Web
8. Masayo Harada, Keiichi Akita. Mouse fibroblast growth factor 9 N143T mutation leads to wide chondrogenic condensation of long bones. The 43rd Annual Meeting of the Molecular Biology Society of Japan MBSJ 2020 Online 2020.12.02 Web
9. Tomoyuki Yano. New idea and concept of iPAP flap and SaS flap for breast reconstruction. TSPS 2020 2020.12.05 Web
10. Shimano S., Ohkawa R., Nambu M., Sasaoka M., Yamazaki A., Fujii Y., Igarashi K., Horiuchi Y., Lai SJ., Kameda T., Ichimura N., Fujita K., Tohda S. and Tozuka M. Dramatic change of high-density lipoprotein structure and serum amyloid A distribution after orthopedic surgery. 2020 AACC Annual Scientific Meeting & Clinical Lab Expo 2020.12.16 On-line
11. Horiuchi Y., Lai SJ., Shimano S., Kameda T., Ichimura N., Tohda S., Tozuka M. and Ohkawa R. Novel cholesterol efflux assay using immobilized liposome-bound gel beads: confirmation and improvement for application in clinical laboratory. 2020 AACC Annual Scientific Meeting & Clinical Lab Expo 2020.12.16 On-line