

結果であったが、形・サイズ・位置の3要素には有意差を認められず、これらはNAC再建時に留意して再建した結果と考えられる。一方、色調・乳頭の突出の2要素は経時的に退色・短縮を認めることをすでに報告したが、その変化が評価に影響したと考えられる。乳頭乳輪切除を要する患者の癌告知と術式決定時に本研究結果を患者に伝えることにより、癌の受け入れや切除の許容、心的サポートにつながると考えられる。

5-2.

Effects of scapular elevation exercises with different alignments on trapezius and levator scapulae muscles

(社会人大学院博士課程4年人体構造学分野)

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【Background】 The purpose of this study is to verify the alignment that separately stimulates the activity of the trapezius and levator scapulae muscles. This was evaluated by performing scapular elevation exercises with different spine and upper limb alignments.

【Methods】 The subjects were 25 adult males (50 shoulders). Four measuring alignments were set in the sitting posture (spine, upper limbs): condition 1 (erect, drooped), condition 2 (erect, behind back), condition 3 (kyphosis, drooped), and condition 4 (kyphosis, behind back). Spine alignment was measured as forward head angle, upper thoracic angle, and pelvic tilt angle. Upper limb alignment was measured as scapula tilt angle, scapula rotation angle, and scapula spine distance. The exercise task was scapular elevation, and the muscles were measured for muscle thickness using a diagnostic ultrasound device. Each measurement was performed three times, and the mean values were compared among the 4 conditions.

【Results】 Among the 4 conditions spine and upper limb alignment were significantly greater in conditions 1

and 2 ($p < 0.01$). Muscle thickness was significantly greater in the trapezius muscle in condition 1 ($p < 0.01$) and also in the levator scapulae muscles in conditions 2 and 3 ($p < 0.01$).

【Discussion】 An increase in muscle thickness means that activity was stimulated in that muscle, and a significant difference can be interpreted as activity being stimulated separately in both muscles. The results suggest that condition 1 stimulated activity in the trapezius muscle, while conditions 2 and 3 stimulated activity in the levator scapulae muscles. We speculate that there is an alignment that selectively contracts the trapezius and levator scapulae muscles, and we believe that this may help to suggest exercise therapy.

5-3.

ブタの「第三腓骨筋」に対する考案

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【背景】 第三腓骨筋は議論の多い筋である。長趾伸筋の一部とみなすか独立した筋とみなすか意見が分かれているのが現状である。議論の決着には比較解剖が欠かせないが、その前提として、第三腓骨筋という名称がヒトと動物において同一の筋を指している必要がある。我々の関連研究からブタの第三腓骨筋とヒトの第三腓骨筋は同一の筋を指していないと考えられるため、同筋の再検討を行った。

【対象と方法】 ブタ胎児 ($n = 10$ 足) と成獣 ($n = 4$ 足) を用いて、肉眼解剖を行った。

【結果】 ブタ下腿前面には二関節筋が観察された。二関節筋は二つの筋により構成されており、同筋は大腿骨外側顆前方の伸展窩で共通腱として起始した。「第三腓骨筋」と呼ばれる筋は長趾伸筋を覆い伸筋支帯の深層を走行した後に第二中足骨に停止した。長趾伸筋は停止腱を三本出し、第三末節骨、第三・四末節骨、第五末節骨(放射状の走行)に停止した。下腿前面最内側には脛骨外側から起始し、第二中足骨に停止する前脛骨筋が存在した。すべての筋は深腓骨神経支配であった。

【考察】 一般に筋の同定は筋の起始、停止、支配神経に基づいて行う。そもそも、第三腓骨筋は長腓骨筋、短腓骨筋に続き、腓骨から起始する3番目の腓骨筋という意味でヒトの解剖体に対して命名され (Albinus, 1734)、停止は第五中足骨、作用は足関節背屈・外反とされる。家畜解剖学書における第三腓骨筋は起始が大腿骨の伸展窩、停止が第二中足骨、作用は背屈・内反、支配神経は深腓骨神経であり第三腓骨筋と呼ぶ根拠に欠ける。同筋の停止部、走行から、同筋は前脛骨筋に属すると考えられる。ブタには前脛骨筋と呼ばれる筋がすでに存在しているため、「前脛骨筋」とこの「第三腓骨筋」をそれぞれ「短前脛骨筋」と「長前脛骨筋」と呼ぶことを提案する。

6-2.

Interleukin-17 signaling in cerebrum of offspring from mother with diabetes

(大学病院：糖尿病・代謝・内分泌内科)

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A number of human cohort and animal studies suggest that offspring from mother with diabetes (OMD) has an increased risk of neurological issues. However, the underlying mechanism of the neurological issues is not elucidated. The aim of this study is to examine the mechanisms by investigating gene expression in the cerebrum of OMD during the embryonic period. CD-1 females were injected intraperitoneally with 150 mg/kg of streptozotocin for generating OMD. This OMD model showed learning impairment as previously reported. Citrate buffer was used to generate the control group. After mating the females with healthy males, fetal cerebrums were collected at gestational day (GD) 17.5. RNA sequencing revealed 40 differentially expressed genes. Enrichment analysis using the KEGG pathway identified a group of genes (Lipocalin-2 (Lcn-2), S100a8, and S100a9) related to the Interleukin 17 (IL-17) pathway. Quantitative PCR revealed mRNA expression of these genes was significantly higher in OMD. To investigate the distribution of Lcn-2, we next intraperitoneally administered biotinylated Lcn-2 to pregnant

dam at GD 17.5 and collect maternal and fetal samples 30 minutes after the administration. Immunohistochemical staining showed that biotin expression was observed in the maternal cortex but not in the fetal one, suggesting that maternally derived Lcn-2 does not reach the fetal cortex. Altogether, our results demonstrate that IL-17 signaling in the fetal brain may be involved in learning impairments in OMD. This research was supported by the Tokyo Medical University Research Grant (2022).

6-3.

Distal interphalangeal (DIP) joint involvement and its significance in rheumatoid arthritis (RA) — Analysis based on NinJa2018 database

(社会人大学院博士課程4年リウマチ膠原病内科)

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【Purpose】 Distal interphalangeal (DIP) joint, which can be affected in rheumatoid arthritis (RA), is typically seen in osteoarthritis (OA) and psoriatic arthritis (PsA). Therefore, DIP joint is excluded from the evaluable joints in 2010 ACR/EULAR RA classification criteria. The aim of the present study is to examine the involvement of DIP joint and its significance in RA, using NinJa2018 database.

【Methods】 We used the data of adult-onset RA patients registered in NinJa2016 with the data regarding their affected joint distribution available ($n = 10,038$).

【Results】 The number of RA patients who presented with DIP joint involvement (tenderness or swelling in their second to fourth DIP joints) was 206 (2.1%). The DIP involvement was not related to disease duration, stage, mHAQ, positive rate of rheumatoid factor, or those of anti-CCP Ab. On the other hand, the DIP involvement was significantly more frequent in women. RA patients with DIP involvement were younger than those without. Furthermore, pain VAS, TJC, SJC, and DAS28-CRP were significantly higher in RA patients with DIP involvement than those without it.