

2025 Akita University Faculty of Medicine Syllabus

Category : 臨床医学 V (CC1)
Course Title : Anesthesia and Intensive Care Medicine
Eligible Students : grade 5 Related Course
Code : 71643002-18

1. Lead Instructor

Yukitoshi Niiyama (新山 幸俊) (Professor, Dept. of Anesthesiology and Intensive Care (麻酔・蘇生・疼痛管理学講座), 6172, Office Hour: 8:30 - 17:00)

2. Instructors

Yukitoshi Niiyama (新山 幸俊) (Professor, Dept. of Anesthesiology and Intensive Care (麻酔・蘇生・疼痛管理学講座), 6172, Office Hour: 8:30 - 17:00)

Tetsu Kimura (木村 哲) (Hospital Associate Professor, Division of Medical Security and Patient Safety (医療安全管理部), 6173, Office Hour: 8:30 - 17:00)

Akira Nemoto (根本 晃) (Assistant Professor, Dept. of Anesthesiology and Intensive Care (麻酔・蘇生・疼痛管理学講座), 6175, Office Hour: 8:30 - 17:00)

Koji Sato (佐藤 浩司) (Assistant Professor, Dept. of Anesthesiology and Intensive Care (麻酔・蘇生・疼痛管理学講座), 6175, Office Hour: 8:30 - 17:00)

Natsuko Yamamoto (山本 夏子) (Assistant Professor, Dept. of Anesthesiology and Intensive Care (麻酔・蘇生・疼痛管理学講座), 6175, Office Hour: 8:30 - 17:00)

Yuta Horikoshi (堀越 雄太) (Assistant Professor, Dept. of Emergency and Intensive care (救急・集中治療医学講座), 6175, Office Hour: 8:30 - 17:00)

Sahoko Kodama (小玉 早穂子) (Assistant Professor, Dept. of Anesthesiology and Intensive Care (麻酔・蘇生・疼痛管理学講座), 6175, Office Hour: 8:30 - 17:00)

Ayano Sekigawa (関川 綾乃) (Medical Doctor, Dept. of Anesthesiology and Intensive Care (麻酔・蘇生・疼痛管理学講座), 6175, Office Hour: 8:30 - 17:00)

Atsushi Unuma (鵜沼 篤) (Medical Doctor, Dept. of Anesthesiology and Intensive Care (麻酔・蘇生・疼痛管理学講座), 6175, Office Hour: 8:30 - 17:00)

3. Course Description Outline(Course Objectives)

1. Aim

This course provides opportunities to Learn about the medical abilities in the anesthesiology field that doctors in any field will need in the future through medical treatment for patients undergoing general anesthesia and local anesthesia as a member of the team, and to acquire an image of anesthesia work.

2. Learning goals

The goals of this course are to learn and acquire

1) Symptoms / pathological conditions Clinical reasoning

(1) Hypertension / hypotension, (2) Arrhythmia, (3) Hypoglycemia, (4) Hypercarbonemia, (5) Shock, (6) Cardiac arrest, (7) Acidosis / alkalosis, (8) Electrolyte imbalance, (9) Hypertension / hypoglycemia, (10) Difficult airway, (11) Postoperative pain (12) Acute and chronic pain

2) Basic clinical procedures

(1) Repositioning and transfer are possible, (2) Skin disinfection is possible, (3) Observe and assist the insertion of the peripheral venous catheter, (4) Observe and assist the insertion of the arterial catheter, (5) Arterial blood gas analysis can be performed, (6) Observe and assist the insertion of the central venous catheter, (7) insertion and remove the gastric tube, (8) Intravenous administration, (9) Observe and assist general anesthesia, local anesthesia, and blood transfusion (10) Assist to describe the medical records (anesthetic records) (11) Observe various medical certificates, examination documents, and certificates and assist

3) Laboratory procedures (1) Standard operating room vital sign monitors (electrocardiogram, non-invasive arterial pressure, percutaneous oxygen saturation, capnogram, bispectral index, core temperature, etc.) can be worn. (2) Arterial blood gas analysis can be performed.

4) Surgical procedure

(1) Aseptic technique can be performed. (2) You can wash your hands for the procedure. (3) Can perform gown techniques in the operating room. (4) Observe and assist in surgery, preoperative, intraoperative, and postoperative management. (5) Visit and assist nerve blocks.

5) Life-saving measures

(1) Physical signs and vital signs can be used to determine that the situation is highly urgent. (2) Basic life support can be implemented. (3) Participate to the extent possible in the initial response of patients with high urgency, including advanced life support.

6) Anesthesiology practice

(1) Learn clinical reasoning and response to various symptoms and pathological conditions encountered during anesthesia management (above 2. Learning objectives-1)) through the medical treatment of a supervising doctor. (2) Participate in actual anesthesia management to the extent possible under the responsibility of the instructor.

7) Simulation education

(1) Improve clinical skills by repeatedly practicing using a high-performance anesthesia simulator (2) Acquire situational judgment and decision-making ability through his training using scenarios. (3) Experience venous line securing using a simulator, Anatomical diagnosis by echography. (4) Improve self-reflection ability by looking back.

8) Presentation

Prepare and present a presentation on a given anesthesia-related topic.

9) 1-sentence

Describe the day's learnings in a single sentence (40-60 words).

10) Competency education

(1) Learn the pride (ethics, medical behavior) as a doctor by acting as a spokesperson for the patient in an environment where the patient's consciousness of anesthesia is lost and communication cannot be achieved. (2) Understand what to do when anesthesia-related complications occur based on the concept of medical safety. (3) Learn professionalism and team medical care while working in various occupations such as surgeons, nurses, and clinical engineers. (4) Learn recent evidence and guidelines for anesthesia and perioperative management.

1. ねらい

- 1) 将来どのような分野の医師にも必要な麻酔科領域の診療能力について学ぶ。
- 2) 麻酔業務のイメージを獲得する。
- 3) チームの一員として全身麻酔・局所麻酔を受ける患者さんへの診療に関与する。

2. 学修目標

1) 症候・病態，臨床推論

(1) 高血圧・低血圧 (2) 不整脈 (3) 低酸素血症 (4) 高二酸化炭素血症 (5) ショック (6) 心停止 (7) アシドーシス・アルカローシス (8) 電解質異常 (9) 高血糖・低血糖 (10) 困難気道 (11) 術後痛 (12) 急性・慢性痛

2) 基本的臨床手技

(1) 体位交換，移送ができる (2) 皮膚消毒ができる (3) 末梢静脈ラインの確保を見学し，介助できる (4) 動脈血採血・動脈ラインの確保を見学し，介助できる (5) 動脈血採血・検査を実施できる (6) 中心静脈カテーテル挿入を見学す

る (7) 胃管を挿入・抜去できる (8) 静脈内注射を実施できる (9) 全身麻酔，局所麻酔，輸血を見学し，介助できる．
(10) 診療録（麻酔記録）の作成を介助できる (11) 各種診断書・検案書・証明書の作成を見学し，介助できる．

3) 検査手技

(1) 手術室の標準的バイタルサインモニタ（心電図，非観血的動脈圧，経皮的酸素飽和度，カプノグラム，bispectral Index，深部温など）を装着できる (2) 動脈血液ガス分析を実施できる．

4) 外科手技

(1) 無菌操作を実施できる (2) 手技のための手洗いができる (3) 手術室におけるガウンテクニックを見学し，介助できる (4) 手術，術前・術中・術後管理を見学し，介助できる (5) 神経ブロックを見学し，介助できる．

5) 救命処置

(1) 身体徴候，バイタルサインから緊急性の高い状況であることを判断できる (2) 一次救命処置を実施できる (3) 二次救命処置を含む緊急性の高い患者の初期対応に可能な範囲で参加する．

6) 麻酔科診療実習

(1) 麻酔管理中に遭遇する種々の症候・病態（上記 2. 学修目標 - 1）) に対する臨床推論，対応を指導医の診療を通して学ぶ (2) 指導医の責任のもと，可能な範囲で実際の麻酔管理に参加する．

7) シミュレーション教育

(1) 高機能麻酔シミュレータを用いて反復練習することで，臨床技能を磨く (2) シナリオに沿ったトレーニングを通して，状況判断、意思決定能力を獲得する (3) シミュレータを用いた静脈ライン確保，エコーによる解剖学診断を経験する (4) 振り返りで自己省察能力を磨く．

8) プレゼンテーション

与えられたテーマに沿ってプレゼンテーションを作成，発表する．

9) 1-sentence

その日の学びをひとつの文章（40-60 字）にまとめて記録する．

10) コンピテンシー教育

(1) 麻酔という患者の意識が消失してコミュニケーションが図れない環境において，患者の代弁者としてふるまうことで医師としての矜持（倫理，医療行動）を学ぶ (2) 麻酔関連の合併症が生じた場合の対応を医療安全の概念を踏まえて理解する (3) 外科医，看護師，臨床工学技士など多職種が業務を行う中でプロフェッショナリズムとチーム医療を学ぶ．
(4) 最近の麻酔および周術期管理に関するエビデンスやガイドラインを学ぶ．

4. Textbook/Reference Books

TEXT 麻酔・蘇生学第 4 版（南山堂）

NEW 麻酔科学第 3 版（南江堂）

標準麻酔科学第 6 版（医学書院）

Miller's Anesthesia 9th edition (Elsevier)

5. Assessment

Attitude, oral examination, OSCE, presentation, report (impression), 1-sentence, attendance, etc.

態度，口頭試問，OSCE，プレゼンテーション，レポート（感想文），1-sentence，出席など

6. Out of Class Study/Message

07:45 (Monday), 08:00 (Tuesday, Wednesday, Thursday, Friday), Conference Room in the Operating Room

1. Please study the matters immediately before the practical training in the clinical clerkship guide of our university.
2. Please fill in the experience procedure and notebook.
3. Please participate Pain clinic outpatient training (Wednesday, Thursday)
4. Training content and schedule are subject to change. Be sure to contact us in advance.

【集合時刻】(月) 07:45, (火, 水, 木, 金) 08:00

【集合場所】手術室内カンファレンスルーム

1. 本学のクリニカルクラークシップガイドにおける実習直前事項を学習してください。
2. 経験手技, 手帳の記載を行ってください。
3. ペインクリニック外来実習(水曜日, 木曜日)に参加してもらいます。
4. 実習内容や日程は変更されることがあります。必ず事前に連絡します。

麻酔・蘇生・疼痛管理学 臨床実習

Schedule		Contents of Class	
1	Mon [07:45 - 17:00] Orientation Surgical anesthesia case training Subtitle オリエンテーション 手術麻酔症例実習 Instructor Yukitoshi Niiyama, Yuta Horikoshi, etc. (新山 幸俊, 堀越 雄太 ら)	07:45 - 08:45 Conference 08:45 - 10:00 Surgical anesthesia case training 10:00 - 12:00 Orientation 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, collect information and prepare for the next day's surgical patients 07:45 - 08:45 カンファレンス 08:45 - 10:00 手術麻酔症例実習 10:00 - 12:00 オリエンテーション 12:00 - 13:00 昼食 13:00 - 17:00 手術麻酔症例実習, 翌日の手術患者に関する情報収集と予習	
2	Tue [08:00 - 17:00] Surgical anesthesia case training Practical skill Subtitle 手術麻酔症例実習 実技 Instructor Yukitoshi Niiyama, Koji Sato, etc. (新山 幸俊, 佐藤 浩司 ら)	08:00 - 08:45 Conference 08:45 - 12:00 Surgical anesthesia case training 12:00 - 13:00 Lunch 13:00 - 14:30 Practical skill 14:30 - 17:00 Surgical anesthesia case training, collect information and prepare for the next day's surgical patients 08:00 - 08:45 カンファレンス 08:45 - 12:00 手術麻酔症例実習 12:00 - 13:00 昼食 13:00 - 14:30 実技 14:30 - 17:00 手術麻酔症例実習, 翌日の手術患者に関する情報収集と予習	
3	Wed [08:00 - 17:00] Surgical anesthesia case training (Pain clinic outpatient training) Subtitle 手術麻酔症例実習 (ペインクリニック外来実習) Instructor Akira Nemoto, Natsuko Yamamoto, etc. (根本 晃, 山本 夏子 ら)	08:00 - 08:45 Conference 08:45 - 12:00 Surgical anesthesia case training (09:00 - 12:00 Pain clinic outpatient training) 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, collect information and prepare for the next day's surgical patients 08:00 - 08:45 カンファレンス 08:45 - 12:00 手術麻酔症例実習 (09:00 - 12:00 ペインクリニック外来実習) 12:00 - 13:00 昼食 13:00 - 17:00 手術麻酔症例実習, 翌日の手術患者に関する情報収集と予習	
4	Thu [08:00 - 17:00] Surgical anesthesia case training (Pain clinic outpatient training) Subtitle 手術麻酔症例実習 (ペインクリニック外来実習) Instructor Tetsu Kimura, Akira Nemoto, etc. (木村 哲, 根本 晃 ら)	08:00-08:45 Conference 08:45 - 11:00 Surgical anesthesia case training (09:00 - 12:00 Pain clinic outpatient training) 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients 08:00 - 08:45 カンファレンス 08:45 - 11:00 手術麻酔症例実習 (09:00 - 12:00 ペインクリニック外来実習) 12:00 - 13:00 昼食 13:00 - 17:00 手術麻酔症例実習, 翌日の手術患者に関する情報収集と予習	
5	Fri [08:00 - 12:00] Surgical anesthesia case training Subtitle 手術麻酔症例実習 Instructor Yuta Horikoshi, Sahoko Kodama, etc. (堀越 雄太, 小玉 早穂子 ら)	08:00 - 08:45 Conference 08:45 - 12:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients 08:00 - 08:45 カンファレンス 08:45 - 12:00 手術麻酔症例実習, 翌日の手術患者に関する情報収集と予習	

麻酔・蘇生・疼痛管理学 臨床実習

Schedule		Contents of Class
6	Mon [07:45 - 17:00] Surgical anesthesia case training Subtitle 手術麻酔症例実習 Instructor Yukitoshi Niiyama, Koji Sato, etc. (新山 幸俊, 佐藤 浩司 ら)	07:45 - 08:45 Conference 08:45 - 12:00 Surgical anesthesia case training 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients 07:45 - 08:45 カンファレンス 08:45 - 12:00 手術麻酔症例実習 12:00 - 13:00 昼食 13:00 - 17:00 手術麻酔症例実習, 翌日の手術患者に関する情報収集と予習
7	Tue [08:00 - 17:00] Surgical anesthesia case training Anesthesia simulator training Subtitle 手術麻酔症例実習 麻酔シミュレータ実習 (OSCE) Instructor Ayano Sekigawa, Atsushi Unuma, etc. (関川 綾乃, 鷗沼 篤 ら)	08:00 - 08:45 Conference 08:45 - 09:30 Surgical anesthesia case training 09:30 - 12:00 Anesthesia simulator training (OSCE) 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients 08:00 - 08:45 カンファレンス 08:45 - 09:30 手術麻酔症例実習 09:30 - 12:00 麻酔シミュレータ実習 (OSCE) 12:00 - 13:00 昼食 13:00 - 17:00 手術麻酔症例実習, 翌日の手術患者に関する情報収集と予習
8	Wed [08:00 - 17:00] Surgical anesthesia case training (Pain clinic outpatient training) Subtitle 手術麻酔症例実習 (ペインクリニック外来実習) Instructor Akira Nemoto, Natsuko Yamamoto, etc. (根本 晃, 山本 夏子 ら)	08:00 - 08:45 Conference 08:45 - 12:00 Surgical anesthesia case training 09:00 - 12:00 Pain clinic outpatient training 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients 08:00 - 08:45 カンファレンス 08:45 - 12:00 手術麻酔症例実習 (09:00 - 12:00 ペインクリニック外来実習) 12:00 - 13:00 昼食 13:00 - 17:00 手術麻酔症例実習, 翌日の手術患者に関する情報収集と予習
9	Thu [08:00 - 17:00] Surgical anesthesia case training (Pain clinic outpatient training) Subtitle 手術麻酔症例実習 (ペインクリニック外来実習) Instructor Tetsu Kimura, Akira Nemoto, etc. (木村 哲, 根本 晃 ら)	08:00 - 08:45 Conference 08:45 - 11:00 Surgical anesthesia case training (09:00 - 12:00 Pain clinic outpatient training) 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation / anesthesia planning / preparation of surgical patients 08:00 - 08:45 カンファレンス 08:45 - 11:00 手術麻酔症例実習 (09:00 - 12:00 ペインクリニック外来実習) 12:00 - 13:00 昼食 13:00 - 17:00 手術麻酔症例実習, 手術患者の術前評価・麻酔計画プレゼンテーションの準備
10	Fri [08:00 - 12:00] Summary Presentation Subtitle 総括 プレゼンテーション Instructor Yukitoshi Niiyama, Yuta Horikoshi, etc. (新山 幸俊, 堀越 雄太 ら)	08:00 - 08:45 Conference (case presentation) 08:45 - 10:00 Surgical anesthesia training 10:00 - 12:00 Summary, presentation of learning content, submission of 1-sentence and impressions 08:00 - 08:45 カンファレンス (症例提示) 08:45 - 10:00 手術麻酔実習 10:00 - 12:00 総括, 学習内容プレゼンテーション, 1-sentence および感想文提出