





110年度醫學院教學創新與教學成果競賽活動

多元醫學模擬情境進行主動脈介入臨床訓練課程 並探討其學習成效

甘宗旦

教育擬真醫學教育於介入式主動脈手術的訓練:

主動脈瘤相關適應症或併發症發生時,則必須考慮手術治療。基本上現階段手術有標準開放性傳統手術和支架手術兩種方式。雖然標 準開放性傳統手術在長期的預後會有比較少需要再次手術的情況,但對病患而言,會有較大的創傷傷口與較高的手術風險與當次手術併發 症,所以由於較低侵襲性與手術風險的關係,所以不論醫師或患者都逐漸傾向使用支架置放手術。台灣目前施行傳統手術與支架手術得比 例約為1:19。支架手術的進展也由分段分次手術,不碰內臟血管的情況;逐漸已進階到開窗支架手術及分支支架手術,自製開窗手術支 架概念手術,而可達成全血管以支架治療病患的目的。

Lecture:

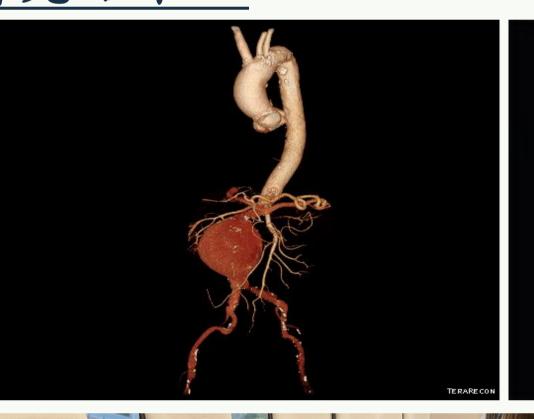
主動脈介入的實務技巧、主動脈支架最新進展、主動脈瘤的診斷及介入計劃、主動脈介入的併發症處理及追蹤

主動脈介入的模擬器操作及個案討論:

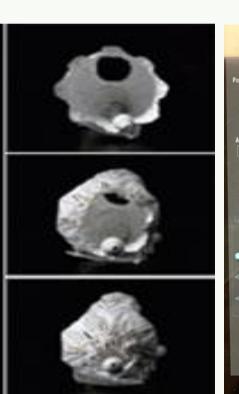
目前利用教學模型體驗課程是讓學員在進行模擬手術之前,能重新復習在上一個階段所學習的手術方式及治療計畫。雖然這種經驗擬 真手感不似模擬手術,但在溫故知新學習操作的原則並進行加深學習印象,是多元教學學習重點所在:

- (1)在學習前、後進行EVAR知識課程的測驗評量,評估學習者在**14個面向**反應層次、學習層次及行為層次上的成效確認。
- (2)各種複雜主動脈病例,介入治療模式復習,實際操作模擬器進行遞送系統與支架放置的學習訓練。
- (3)不同病例手術方式治療計劃。
- ▶強調是由學員團體分組實際操作,而臨床教學教師 能藉學員操作模擬手術中,發現學生需要改善問題,及時回饋修正手術方式。
- ▶進行的流程分為五個部份:問題的確認、目標與目的、手術策略、團隊合作學習及指導老師回饋。
- ▶Kirkpatrick層次: LEVEL 1反應層次(達成)、LEVEL 2學習層次(達成)/ LEVEL 3 行為層次(幅射防護)

研究結果:





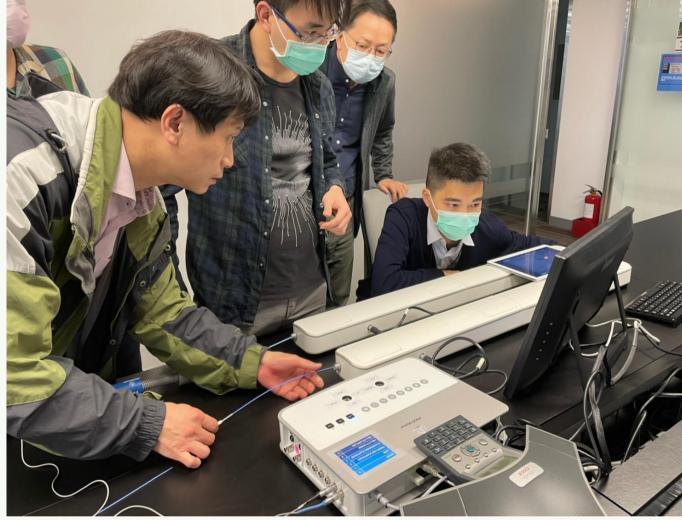


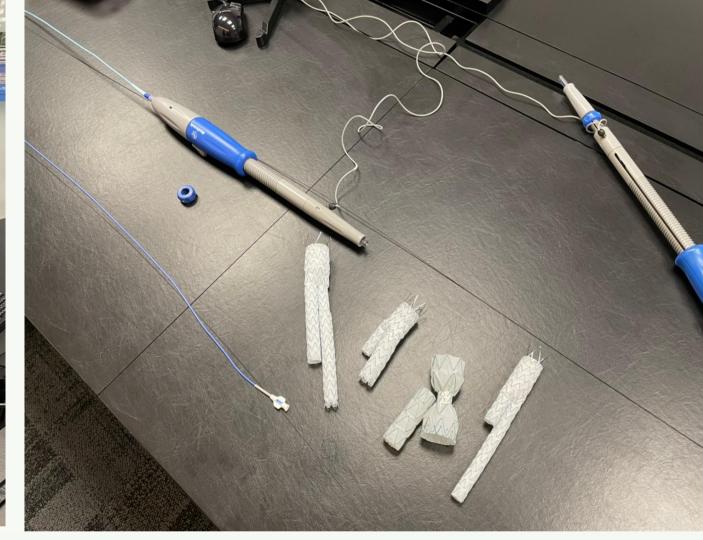


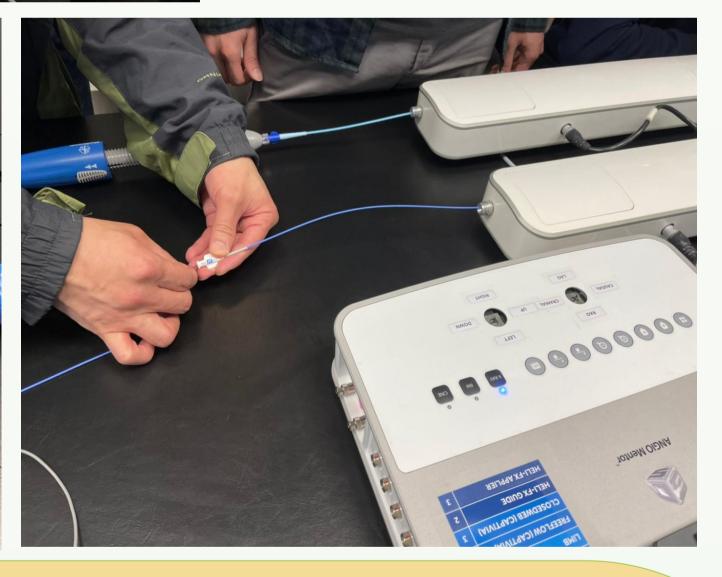




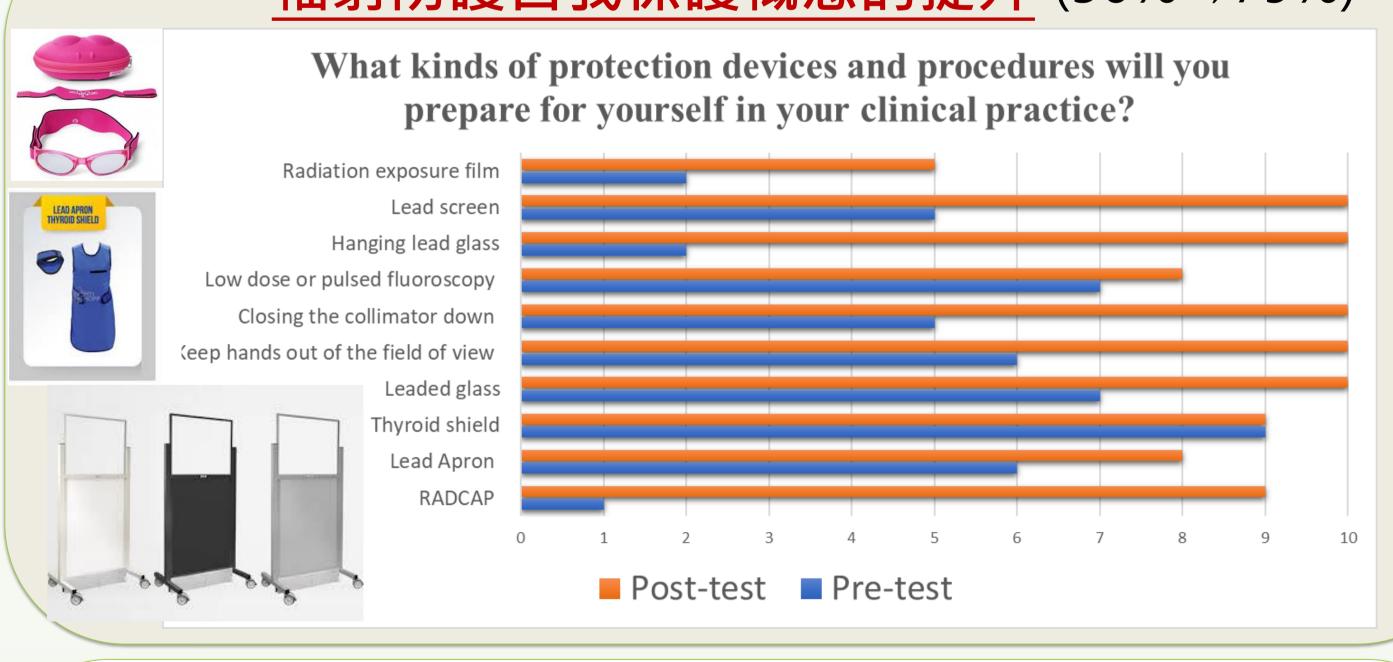




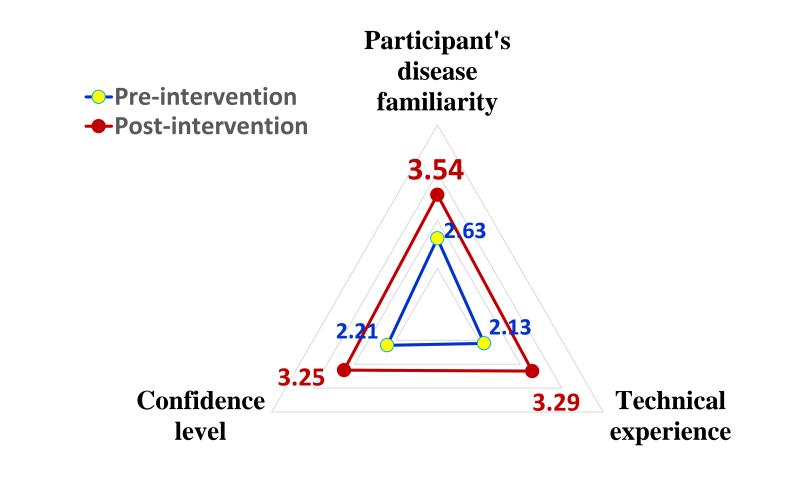




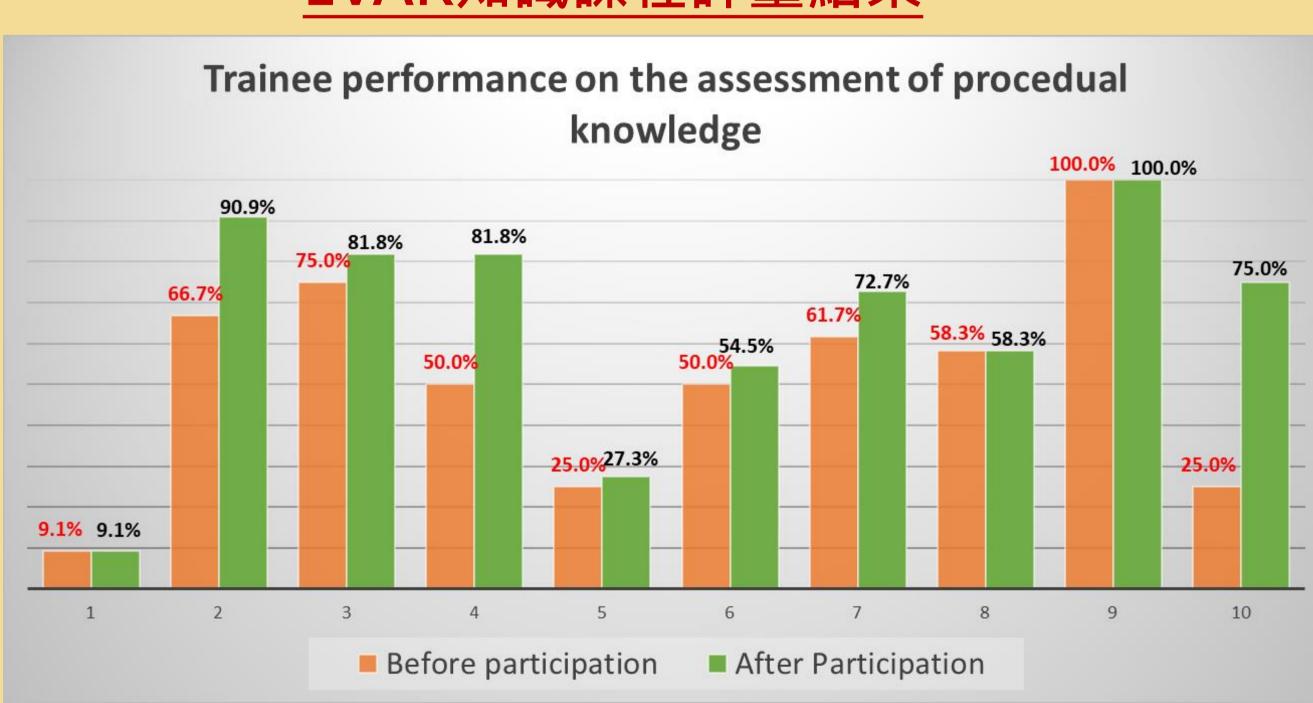
幅射防護自我保護概念的提升 (50%→79%)



課後的知識熟悉度、技術經驗、信心程度顯著提升



EVAR知識課程評量結果



- 1. When placing a working 6-French sheath up-and-over the aortic bifurcation from a contralateral femoral access, which of the following would be the optimal wire to utilize
- 2. The most appropriate platform for advancing an EVAR main body device from the groin to the infrarenal aortic segment
- 3. The largest diameter infrarenal neck that can be treated with currently approved EVAR devices is?
- 4. During an EVAR procedure it is very important to do the following after cannulating the contralateral gate and prior to placing the contralateral limb?
- 5. When performing a thoracic endovascular aortic repair, which wire should be utilized for advancing and deploying your device of choice?
- 6. Regarding anatomic considerations for TEVAR, which is NOT true? Ans: Iliac conduits may be required for iliac arteries
- that are less than 10 mm in order to accommodate the thoracic endograft devices
- 7. Which of the following statements regarding prevention of radiographic contrast media nephrotoxicity is false? Ans:
- Mannitol and furosemide should be administered concurrently. 8. What does a collimator do?
- 9. 關於腔內覆膜支架治療腹主動脈瘤的併發症(complications)敘述,下列何者錯誤 ? Ans:支架往遠心端的移位(caudal migration)與 瘤頸(neck)的角度,長度,血塊和直徑無關
- 10.Contralateral limb cannulation could be performed by (1) cross limb technique (2) cross wire technique (3) crossover
- snare + through and through wire