Access Time /Cure Time Ratio (AT/CT Ratio)

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BACKGROUND

- Operating time is not an adequate metric for intra-operative events.
- There are increasing numbers of surgical approaches to a given spinal condition and there is need to determine the comparative cost-effectiveness of each procedure.
- There is need for a precise metric to compare the performance of different spinal procedures.

PURPOSE

- To determine the Operating Time, Access Time, Cure Time, and Access-Time/Cure-Time ratio for lumbar endoscopic trans-foraminal decompression (LED), using transmuscular and trans-iliac approaches.

STUDY DESIGN

- Prospective case study
- Determination of operating Time
- Determination of Acess time
- Determination of Cure Time
- Calculation of Access Time/ Cure Time Ration (AT/CT Ratio)

STUDY DESIGN

- Definitions:
  - Operating time (OT) = Incision to wound closure.
  - Access Time (AT)= Incision to start of treating the pathology + time from end of treating the pathology to end of incision closure.
  - Cure TIME (CT) = Start to end of treating the pathology
  - Access Time/ Cure Time (AT/CT) Ratio = The ratio of time spent exposing and closing the site of the spinal lesion, and the time spent removing/fixing the lesion.

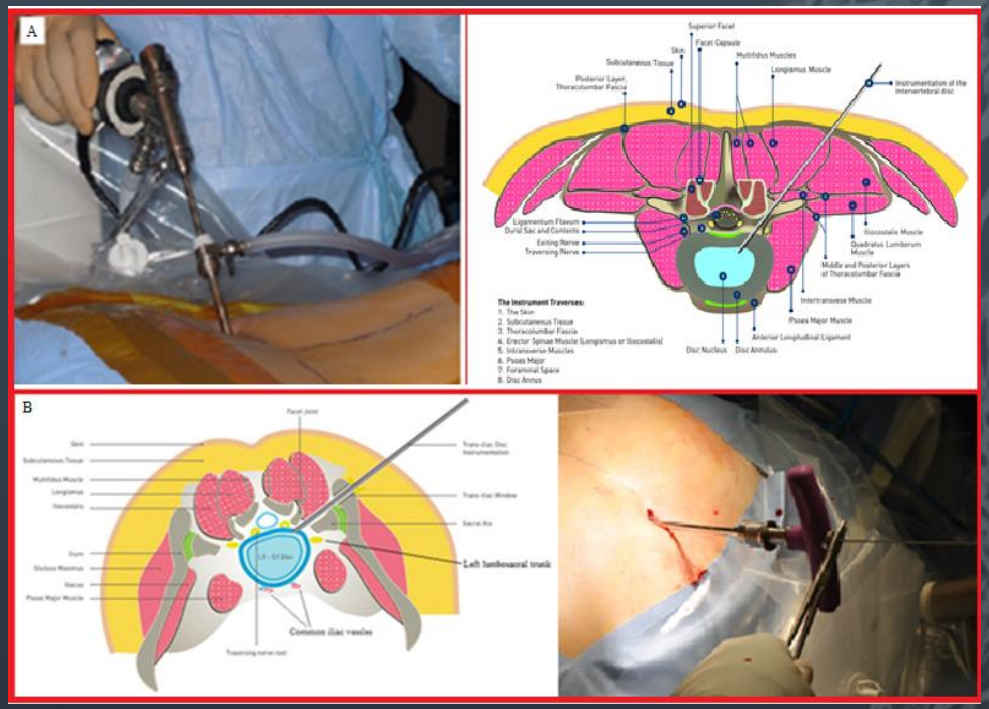
MATERIALS AND METHODS

- 35 patients (male = 16, female = 19) underwent either trans-muscular or trans-iliac L5-S1 lumbar endoscopic discectomies (LED) percutaneously.
- Intra-operative documentation of operating time, access time, and cure time were performed.
- AT/CT Ratios for trans-muscular and trans-iliac approaches were caculated.
- Comparison of the AT/CT ratios of the transforaminal transmuscular, and transforaminal trans-iliac approaches are performed.
- Statistical analyses of differences of the ratios of the two ratios were performed.

MATERIALS AND METHODS

A. Trans-muscular LED

B. Trans-iliac LED



RESULTS

- 35 patients - 19 female and 16 male were studied.
- Average age was 50.8 years (range 27 – 75 years).
- 22 patients had trans-muscular approach.
- 13 had trans-iliac approach.

RESULTS

The Operating time (OT) and (AT/CT) ratio:

- Trans-muscular OT = 35 minutes
- Trans-muscular AT/CT ratio = 0.93.

RESULTS

The Operating time (OT) and (AT/CT) ratio:

- Trans-iliac OT = 41.7 minutes
- Trans-iliac AT/T ratio = 0.90.

RESULTS

The difference between trans-muscular and trans-iliac LED AT/CT ratios was not statistically significant.

CONCLUSION

- Slightly more time is spent addressing the pathology than approaching and closing in both techniques
- The total operating time is short in both approaches.
- The small size of the population studied may have skewed the result in favor of the trans-iliac approach as compared with trans-muscular.
- The AT/CT ratio will clearly indicate the efficiency of the different approaches to a given pathology with the less efficient having higher ratio than the more efficient.
- Since positioning of the patient on the operating table for optimum access can arguably considered as part of the operation, the authors will include the positioning as part of the AT in the future.