Performance Study Report
Comparisons of S-Cut vs scissors in acute trauma care.

The study is performed by the Trauma Centre, Sahlgrenska University Hospital, Gothenburg, Sweden.

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Abstract
In collaboration with Per Örtenwall senior lecturer, head of trauma surgery team, Sahlgrenska university hospital in Gothenburg a time performance study was carried out to compare and examine results of the use of the S-Cut and ordinary scissors in acute trauma situations.

The practical aspects of the study were performed by ordinary staff at the Trauma centre of Sahlgrenska university hospital, Gothenburg. The staff is experienced in the use of both scissors and S-CUT. Clothes used in the time study performed were samples of the Swedish defence force, in this case motorjacket and trouser, both winter lined.
The results demonstrate that using the S-Cut is much faster and saves significant time. Moreover the staff reported that S-CUT is much more efficient and pleasant to work with. With S-CUT one does not need to use muscle force to cut up coarser clothing, which is a must when using scissors.

Background

The emergency cutting tool, S-CUT, is used in trauma and emergency situations to quickly remove clothing or such like, in order to detect injuries without needing to change the patient's position and thereby to risk further damage or unnecessary sufferings. When Sahlgrenska university hospital Gothenburg made a test of an S-CUT prototype in 2006, they realized that it went considerably faster and that the S-Cut was smoother for both patient and staff. Since then the S-CUT is an established standard tool in the hospitals trauma department's organization. In collaboration with Per Örtenwall senior lecturer, head of team trauma surgery - Sahlgrenska university hospital Gothenburg, a time performance study was established in order to academically study the comparison of S-Cut and scissors.
The study was established to examine, verify and report the results

Before the introduction of S-Cut, special scissors (as pictured) were used to free the patient of clothing in order to start investigations and subsequent treatment. There are no earlier studies available that verifies the time it takes to release patients from clothing.

S-CUT Modell 501

The emergency cutting tool S-CUT has been in the market a few years. The S-Cut is used to smoothly cut open the patient clothing to free the patient body for investigations and treatment. S-Cut replaces scissors, cutters, knifes and alike tools. S-CUT decreases the risk of unintentional injury of the patient, it also decreases the staff encumbrance as it only requires a small force in order to use.
By end of 2008 the S-Cut tool was in service by 90% of the emergency hospitals and 40% of ambulances in Sweden.

The performance study was established to demonstrate if the use of S-Cut versus scissors would result in time differences at the release of a trauma patients clothing as to enable the first acute investigation and treatment.

Hypothesis

The test will show that:

- With the S-CUT cutting tool a full body assessment can start faster than if using scissors to uncover clothing of trauma patients.

Method

Testings and studies were carried out at the emergency room, Sahlgrenska university hospital, Gothenburg. The persons that carried out the tests and studies were staff from the trauma centre that normally performs this kind of work in their everyday services.

The clothes used in the time study were samples of the Swedish defence's motorjacket and trousers, winter lined.

The measure of time begins when" the patient" lies on the stretcher in the emergency room and the appropriate staff stood ready to release the patient from clothes. The stopwatch was stopped when all clothing was opened on the front of the body with access to the patient.

Study

The study included four patients using the S-Cut and four patients using scissors.
The S-Cut had a new circular cutting blade before the testing started. The cutting blade was rotated to a new cutting part of the blade after each patient. The new part of the cutting blade was indicated with a permanent marker felt pen. A pair of new scissors was used when the time study started and the same pair of scissors was used in all four occasions.

The trauma centre at Sahlgrenska University hospital Gothenburg, recorded the the performance study by text and video.
The staff of the acute services performed the moments following the table below.

Results

The Swedish defence's motorjacket and trousers, winter lined.	**S-CUT**	**Scissor**	**Difference in time**
Person 1 och 2	41 sek	99 sek	59 sek
Person 1 och 2	52 sek	81 sek	29 sek
Person 3 och 4	29 sek	80 sek	51 sek
Person 3 och 4	27 sek	73 sek	46 sek
Average	37 sek	83 sek	46 sek

S-CUT compared with scissors is faster at the removal of clothes from trauma patients in order to maintain a full body assessment. In some cases, S-CUT is twice as fast.

Discussion

The study demonstrated that S-CUT clearly was faster than scissors in trauma situations. However it is important that the blade is rotated forward so that a sharp cutting surface is ready to be used. If the blade is not sharp enough, S-CUT performs its function much poorer and is more difficult to use than scissors. We recommend that each emergency department, or others that will use S-CUT, develop a routine that assures the rotation of the blade in order to secure that the blade is sharp enough. It is a small routine matter.
Also it was made clear that the staff appreciated the S-CUT much more efficient to work with. The staff voiced their appreciation for the S-Cut efficiency and that the S-CUT does not request the use of muscle force to cut open coarser clothing, which is a must when using scissors.

” I cannot see myself without the S-CUT and go back to the use of scissors again”
- ***Sari Siirilä..***

References

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