ASSESSMENT OF THE BURN WOUND Assessing size

ASSESSMENT OF THE BURN WOUND Assessing size

The defining feature of any burn referral and usually the first question to seek clarification is ‘What is the size of the burn?’ From this simple question the burn team can establish the correct method of transfer and the resources needed to appro priately manage the patient with burn on arrival. The standard method of estimating burn size is to use percentage body surface area. As per the Emergency Man agement of Severe Burns (EMSB) the distal wrist crease to fin gertips of an adult patient’s hand is approxima tely 1% TBSA (1.25%), due to the inherent error in measurement this is useful for small burns of up to 10% TBSA. An estimation of burn size (greater than 15% in an adult; 10% in extr emes of age) will also determine whether fluid resuscitation is required. A useful aide-memoire in the prehospital and emergency setting is the Wallace rule of nines. In this schematic each body part is assigned a burn percentage: each upper limb is 9%, head is 9%, lower limbs are 18% each, posterior torso and buttocks is 18% and the anterior torso 18% (chest 9% and abdomen 9%). The remaining 1% is assigned to the genitalia. The rule of nines has been in established clinical practice for 70 years but it is not without drawbacks. In terms of accuracy there is a tendency to overestimate burn size, and in the obese patient the proportion of surface area of the arms and head decreases as the surface area of the torso and legs increase. A modification of 5% for the arms, 20% for the legs and 50% for the torso has been suggested but is not widely used. However, the rule of nines is an excellent means to quickly and reliably assess the size of a burn in an emergency setting, providing the clinician is aware of the limitations; it is not suitable for children under 10 years of age. On arrival at a burns unit, the standard formatting for assessment and documentation is the Lund and Browder chart (Figure 46.2). Developed in 1942 f ollowing a mass casualty burn event at a nightclub in Boston, MA, USA, the chart is a schematic representation of the anterior and posterior body . It further subdivides body areas and allows for di ff erentiation of burn depth by shading. The Lund and Browder chart can be completed at multiple points during a burn admission to document changes in burn size/depth and can also be used as an adjunct to surgical notes, when skin graft donor sites and grafted areas can be shaded. In an increasingly digital era, it is worth noting the easy a vailability of burn management apps that are readily com patib le with smart phones. These invariably involve shading Alexander Burns Wallace , 1906–1974, Scottish plastic surgeon and founding member of the British Association of Plastic Surgeons. Charles C Lund , 1895–1972, American surgeon, Boston City Hospital, Boston, MA, USA. Newton C Browder , 1893–1969, American surgeon, Boston City Hospital, Boston, MA, USA. Lund and Browder developed the chart based on their experiences in treating over 300 burn patients injured in a fire in Boston in 1942. - - - a pictorial representation of the body , which then calculates a burn size. Additional features include adding age and weight to allow automatic estimation of fluid resuscitation requirements.

A A 1 1 2 2 13 2 2 13 1 ½ 1 ½ 1 ½ 1 ½ 1 2 ½ 2 ½ 1 ½ 1 ½ 1 ½ 1 ½ B B B B C C C C 1 ¾ 1 ¾ 1 ¾ 1 ¾ Relative percentage of area affected by growth 0 1 5 10 15 Adult Age in years 9 8 6 5 4 3 A Head 2 3 4 4 4 4 B Thigh 2 2 3 3 3 3 C Leg Figure 46.2 Modi /f_i ed Lund and Br owder table and diagram.

ASSESSMENT OF THE BURN WOUND Assessing size

The defining feature of any burn referral and usually the first question to seek clarification is ‘What is the size of the burn?’ From this simple question the burn team can establish the correct method of transfer and the resources needed to appro priately manage the patient with burn on arrival. The standard method of estimating burn size is to use percentage body surface area. As per the Emergency Man agement of Severe Burns (EMSB) the distal wrist crease to fin gertips of an adult patient’s hand is approxima tely 1% TBSA (1.25%), due to the inherent error in measurement this is useful for small burns of up to 10% TBSA. An estimation of burn size (greater than 15% in an adult; 10% in extr emes of age) will also determine whether fluid resuscitation is required. A useful aide-memoire in the prehospital and emergency setting is the Wallace rule of nines. In this schematic each body part is assigned a burn percentage: each upper limb is 9%, head is 9%, lower limbs are 18% each, posterior torso and buttocks is 18% and the anterior torso 18% (chest 9% and abdomen 9%). The remaining 1% is assigned to the genitalia. The rule of nines has been in established clinical practice for 70 years but it is not without drawbacks. In terms of accuracy there is a tendency to overestimate burn size, and in the obese patient the proportion of surface area of the arms and head decreases as the surface area of the torso and legs increase. A modification of 5% for the arms, 20% for the legs and 50% for the torso has been suggested but is not widely used. However, the rule of nines is an excellent means to quickly and reliably assess the size of a burn in an emergency setting, providing the clinician is aware of the limitations; it is not suitable for children under 10 years of age. On arrival at a burns unit, the standard formatting for assessment and documentation is the Lund and Browder chart (Figure 46.2). Developed in 1942 f ollowing a mass casualty burn event at a nightclub in Boston, MA, USA, the chart is a schematic representation of the anterior and posterior body . It further subdivides body areas and allows for di ff erentiation of burn depth by shading. The Lund and Browder chart can be completed at multiple points during a burn admission to document changes in burn size/depth and can also be used as an adjunct to surgical notes, when skin graft donor sites and grafted areas can be shaded. In an increasingly digital era, it is worth noting the easy a vailability of burn management apps that are readily com patib le with smart phones. These invariably involve shading Alexander Burns Wallace , 1906–1974, Scottish plastic surgeon and founding member of the British Association of Plastic Surgeons. Charles C Lund , 1895–1972, American surgeon, Boston City Hospital, Boston, MA, USA. Newton C Browder , 1893–1969, American surgeon, Boston City Hospital, Boston, MA, USA. Lund and Browder developed the chart based on their experiences in treating over 300 burn patients injured in a fire in Boston in 1942. - - - a pictorial representation of the body , which then calculates a burn size. Additional features include adding age and weight to allow automatic estimation of fluid resuscitation requirements.

A A 1 1 2 2 13 2 2 13 1 ½ 1 ½ 1 ½ 1 ½ 1 2 ½ 2 ½ 1 ½ 1 ½ 1 ½ 1 ½ B B B B C C C C 1 ¾ 1 ¾ 1 ¾ 1 ¾ Relative percentage of area affected by growth 0 1 5 10 15 Adult Age in years 9 8 6 5 4 3 A Head 2 3 4 4 4 4 B Thigh 2 2 3 3 3 3 C Leg Figure 46.2 Modi /f_i ed Lund and Br owder table and diagram.

ASSESSMENT OF THE BURN WOUND Assessing size

The defining feature of any burn referral and usually the first question to seek clarification is ‘What is the size of the burn?’ From this simple question the burn team can establish the correct method of transfer and the resources needed to appro priately manage the patient with burn on arrival. The standard method of estimating burn size is to use percentage body surface area. As per the Emergency Man agement of Severe Burns (EMSB) the distal wrist crease to fin gertips of an adult patient’s hand is approxima tely 1% TBSA (1.25%), due to the inherent error in measurement this is useful for small burns of up to 10% TBSA. An estimation of burn size (greater than 15% in an adult; 10% in extr emes of age) will also determine whether fluid resuscitation is required. A useful aide-memoire in the prehospital and emergency setting is the Wallace rule of nines. In this schematic each body part is assigned a burn percentage: each upper limb is 9%, head is 9%, lower limbs are 18% each, posterior torso and buttocks is 18% and the anterior torso 18% (chest 9% and abdomen 9%). The remaining 1% is assigned to the genitalia. The rule of nines has been in established clinical practice for 70 years but it is not without drawbacks. In terms of accuracy there is a tendency to overestimate burn size, and in the obese patient the proportion of surface area of the arms and head decreases as the surface area of the torso and legs increase. A modification of 5% for the arms, 20% for the legs and 50% for the torso has been suggested but is not widely used. However, the rule of nines is an excellent means to quickly and reliably assess the size of a burn in an emergency setting, providing the clinician is aware of the limitations; it is not suitable for children under 10 years of age. On arrival at a burns unit, the standard formatting for assessment and documentation is the Lund and Browder chart (Figure 46.2). Developed in 1942 f ollowing a mass casualty burn event at a nightclub in Boston, MA, USA, the chart is a schematic representation of the anterior and posterior body . It further subdivides body areas and allows for di ff erentiation of burn depth by shading. The Lund and Browder chart can be completed at multiple points during a burn admission to document changes in burn size/depth and can also be used as an adjunct to surgical notes, when skin graft donor sites and grafted areas can be shaded. In an increasingly digital era, it is worth noting the easy a vailability of burn management apps that are readily com patib le with smart phones. These invariably involve shading Alexander Burns Wallace , 1906–1974, Scottish plastic surgeon and founding member of the British Association of Plastic Surgeons. Charles C Lund , 1895–1972, American surgeon, Boston City Hospital, Boston, MA, USA. Newton C Browder , 1893–1969, American surgeon, Boston City Hospital, Boston, MA, USA. Lund and Browder developed the chart based on their experiences in treating over 300 burn patients injured in a fire in Boston in 1942. - - - a pictorial representation of the body , which then calculates a burn size. Additional features include adding age and weight to allow automatic estimation of fluid resuscitation requirements.

A A 1 1 2 2 13 2 2 13 1 ½ 1 ½ 1 ½ 1 ½ 1 2 ½ 2 ½ 1 ½ 1 ½ 1 ½ 1 ½ B B B B C C C C 1 ¾ 1 ¾ 1 ¾ 1 ¾ Relative percentage of area affected by growth 0 1 5 10 15 Adult Age in years 9 8 6 5 4 3 A Head 2 3 4 4 4 4 B Thigh 2 2 3 3 3 3 C Leg Figure 46.2 Modi /f_i ed Lund and Br owder table and diagram.

Revision #1
Created 2025-12-31 15:17:21 UTC by Omar Ayman
Updated 2025-12-31 15:17:21 UTC by Omar Ayman