4.4.6 MICROSCOPIC EVALUATION

4.4.6.1 DAY 1 OF TREATMENTS

**Figure 4.10**: Histology of wound area according to group of treatments on Day 1 of Treatments. H&E stained sections. 20X Magnification. Black arrow showed the wound edge with yellow line indicating the demarcation line. (A) Group NO (No Dressing), (B) Group SA (Saline), (C) Group IN (Intrasite), (D) Group GE (Gelam), (E) Group NE (Nenas), D=Dermis; E=Epidermis; S=Scab; WA=Wound area.
With H&E staining, the general results of the various treatment groups on Day 1 of treatments could be seen and compared at low magnification (e.g. 20X) (Figure 4.10). Specific details and features will be discussed in the later part in this section.

In H&E stained slides, it was observed that the demarcation line (DL) formed due to the dermis near the wound edges was rich in inflammatory cells. DL separated the necrotic tissues from the living tissue. Microphotographs (Figure 4.11) showed that DL was not obvious in the wounds of Group NO (No dressing) and Group SA (Saline); thus, indicating that the migration of inflammatory cell was not obvious in the wound of these two groups. The wound edges and epidermis found on the wound area were thin and unclear. DL in the treatments groups (Group IN, Group GE and Group NE) was obvious; thus, indicating that the migration of cells was greater compared to the Group NO (No dressing) and Group SA (Saline). Cell migration seemed obvious in Group GE (Gelam) and Group NE (Nenas).

**Figure 4.11:** Histology of wound edges in Group NO (No Dressing) on Day 1 of treatments. H&E stained section. 40X Magnification. Wound edge found was thin and not obvious. Demarcation line contained lots of inflammatory cells.
H&E stained slide showed that the wound edge was thin and not obvious on Day 1 of treatments for Group NO (No dressing). DL was formed by the abundance of inflammatory cells (Figure 4.11). In MT stained slides, no collagen or very little collagen was found on Day 1 of treatments as the blue colored collagen was less.

Photomicrographs of VE stained slide in Group SA (Saline) (Figure 4.13) showed a clear demarcation between wound area and normal skin. Due to the presence of the exudates, the wound area was stained yellow in color. Collagen which was stained in red color was less in the wound area compared to the surrounding tissue. Scab that covered the wound surface could also be seen easily.
From the photomicrograph of Day 1 of treatments in Group IN (Intrasite) (Figure 4.14), inflammatory cells were found abundant in the area of wound edge; thus, forming a clear demarcation. Migration of cells was started near the wound edge. Scab on the surface of wound was thick. VE stained slides (Figure 4.15) showed a clear demarcation line. The wound area was faintly stained with yellowish color since it was filled with other components such as cytoplasm and exudates. Collagen and fibroblasts stained red in color appeared to be very little.
Photomicrograph (Figure 4.17) showed that inflammatory cells were abundant near the wound edge; cell migration was obvious in wounds of Group GE (Gelam) on Day 1 of treatments. Small blood vessels found in wound area (Figure 4.16) indicated the beginning of angiogenesis. Scab formed on the surface of the wound bed was thinner compared to scab found on wounds of Group IN (Figure 4.14). VE stained slides (Figure 4.17) showed that level of collagen content (stained in red color) was greater compared to the other treatment groups. In addition, wound area was stained more intensely; thus, indicating less presence of exudate in the wound of Group GE (Gelam) on Day 1 of treatments.
Photomicrographs of the wound area of Group NE (Nenas) on Day 1 of treatments showed marked epithelialization (Figure 4.10E and Figure 4.18). Wound edges were occupied with abundant inflammatory cells; thus, forming clear demarcation line. Scab formed was thin compared to the other groups. VE stained slides (Figure 4.18) showed that wound area contained lesser collagen content compared to Group GE (Figure 4.17). The wound area was stained faintly in yellowish color indicating the presence of exudates.