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Study:



Patient-reported outcome measures after routine periodontal and implant surgical procedures.

Tan WC, Krishnaswamy G, Ong MM, Lang NP
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Relevant background to study:

Although low rates of post-operative complications have been reported after routine periodontal and implant surgeries, little is known about the patient's

perception of bleeding, pain swelling and bruising after these procedures. The latter may be important in setting and managing patients' expectations.

Study Aims:

To examine the patient reported outcome measures (PROM) involving patients' perception of bleeding, pain, swelling and bruising for crown lengthening (CL), open flap debridement (OFD)

or straight forward implant placement (IMP) during the first week following surgery, and to examine the prevalence of post-surgical complications.

Methods:

This observational clinical audit study recruited 468 consecutive patients who were in need of periodontal surgery (CL: n=259; OFD: n=94; IMP: n=115) between 2009-2011, at the Periodontics Unit of the National Dental Centre, Singapore. The patients were asked to chart their perceptions on bleeding, swelling, pain and bruising over the first week of the healing period on days 0, 3, 5 and 7 using a visual analogue scale (VAS) with equal units ranging from 0 to 10 with 0 designated as no bleeding, swelling, pain or

bruising and 10 for excruciating pain, extreme bleeding, swelling, or bruising. On day 7, patients were examined clinically for post-surgical complications (tenderness on palpation, swelling, suppuration, flap dehiscence). Additional confounding factors such as gender, procedure type, surgery duration, surgeon's experience, use of painkillers and periosteal releasing incisions were recorded and taken into consideration using a linear random-effect mixed model.

Results:

- PROM for bleeding, swelling, pain and bruising during the first week of healing were modest and decreased to almost 0 over 7 days. The decrease in VAS scores was the slowest for swelling, pain or bruising.
- IMP had the lowest median VAS score on the day of surgery whereas the decrease in VAS scores was the slowest for OFD.
- Surgeries lasting 60 minutes or more had higher VAS scores for swelling and bruising for all days recorded and a higher VAS score for pain at the day of surgery.
- The use of a periosteal releasing incision resulted in a significantly higher VAS score for swelling.

- After adjustment for confounders in a linear mixed random-effects model, the PROM showed that:
 - Surgery duration of less than 60 minutes and time after surgery decreased the VAS scores for bleeding, swelling, pain and bruising.
 - VAS scores for swelling were lower for males and lower when no periosteal releasing incisions were employed.
 - Longer operator experience only reduced the VAS score for bleeding.
- At day 7, the prevalence of flap dehiscence and tenderness to palpation was around 10% and the prevalence for swelling and suppuration was below 5% for all types of surgical procedures.

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**Conclusions
and impact**



What can we learn as practitioners?

- The patient's perception of bleeding, swelling, pain and bruising are modest but can last for up to 1 week.
- Keeping surgery time below 1 hour results in a lower perception of bleeding, swelling, pain and bruising.
- The use of periosteal releasing incisions results in a higher patient perception of swelling.
- Longer operator surgical experience does not result in a lower patient perception of swelling, pain and bruising.
- There were no gender differences in the patient's perception of bleeding, pain and bruising, but swelling was perceived by females to be worse than males.