TO ASSESS THE EFFECT OF CONTINUING ANTIPLATELET ON HAND SURGERY

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ABSTRACT

BACKGROUND

The aim and objective of the study is to assess the effect of continuing antiplatelet therapy during hand surgery on bleeding and fundamental outcome.

MATERIALS AND METHODS

Between January 2012 to January 2018, 336 patients underwent hand surgery for removal of ganglion under intravenous local anaesthesia. They were divided into three groups: group 1 was made of 61 patients on aspirin 75 mg/d as monotherapy, in group 2 there were 63 patients on aspirin (75 mg/d) and clopidogrel (75 mg/d) as dual antiplatelet therapy, in both group antiplatelet drug never stopped. Group 3 acted as a control, with 212 patients who did not receive any antiplatelet drug. The incidence of clinically significant pre or post-operative complications was recorded. Patients were reviewed at 7 and 14 days after surgery.

RESULTS

There were no significant difference in the incidence of complications in monotherapy antiplatelet group and control group. Hematoma was observed in six patients; four patients from group 2 and one patient from each group 1 & 3. Wound dehiscence was observed in seven patients; one patient from each group 1 & 3; five patients from group 2; Bleeding were observed in four patients from group 2 only. Infections were observed in four patients: one patient from group 1 & 3 each; two patients from group 3.

CONCLUSION

Our study demonstrates that continuation of aspirin did not increase the risk of complications. It is unnecessary to stop aspirin before hand and wrist surgery with good surgical techniques. However, complications were increased in dual antiplatelet therapy group.

KEYWORDS

Antiplatelet drugs (aspirin/clopidogrel), Hand surgery, Post-operative complications.

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BACKGROUND

Antiplatelet agents, such as aspirin and thienopyridines (clopidogrel and ticlopidine) reduce the risk of non-fatal myocardial infarction and stroke by about one third in patients with unstable angina or a past history of myocardial disease, according to a meta-analysis of several randomized studies.[1]

It is recommended in guidelines to stop aspirin therapy, if indicated 7 to 10 days before surgery.[2] Discontinuation of antiplatelet therapy may trigger a prothrombotic rebound phenomenon.[3] A meta-analysis found that aspirin discontinuation conferred a three-fold increase in the risk of major adverse cardiac events in patients at risk for, or with confirmed CAD.[4] Patients taking antithrombotic medications that require surgery put physicians in a dilemma: stopping antithrombotic medication to avoid excessive bleeding, but increasing the risk of thromboembolic disease, or maintaining the antithrombotic medication to prevent thromboembolism, but increasing the risk of bleeding. Clinical experiences and meta-analysis studies indicate two groups of situations: surgeries and invasive procedures with low risk of bleeding (e.g., endoscopy, cataract surgery, arthrocentesis, and dermatological surgeries) do not require discontinuation of antithrombotic therapy, and surgeries with increased risk of bleeding require the suspension of oral antithrombotic medication and, depending on the risk of thrombosis, a transition period with heparin.[5,6,7]

A present study aimed to assess whether it is necessary to suspend antiplatelet for elective surgical procedures of the hand.

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MATERIALS AND METHODS

Study Setting

SRN, MLNMC Allahabad

Study Design

Prospective observational study

Study Participant

All patients (>18 years) who was underwent surgery for ganglion over hand and exclusion were in consistent use of antiplatelet medication, perioperative discontinuation of an antiplatelet medication and concomitant use of an anticoagulant medication (e.g. warfarin, enoxaparin) and pregnancy.

Study Technique

Complete evaluation of all patients with hand ganglion attending OPD of SRN, MLNMC Allahabad from January 2012 to January 2018 who wants surgery for it. The onset of complications was assessed during surgery and at day 7 & day 14 post-surgery.

All Patients were divided into Three Groups-

- Group 1: patients taking aspirin as monotherapy.
- Group 2: patients taking aspirin & clopidogrel both.
- Group 3: patients not taking any antiplatelet drugs.

These patients were informed that performing surgery while remaining on antiplatelet medication could increase their chances of complication related to surgical site bleeding although we expected chance of bleeding requiring reoperation to be rare based on our prior anecdotal experience of containing such medications perioperatively.

The dose of aspirin was 75 mg daily for all treated patients for aspirin group; in dual platelet therapy group dose was clopidogrel 75 mg + aspirin 75 mg daily. No perioperative changes were made to the patient's current antiplatelet therapy regimen.

Study data collected at the preoperative visit and 7^{th} & 14^{th} postoperative day. Identical data were recorded for the entire cohort. Complications were recorded. Complications would be a hematoma at the site of surgery, excessive bleeding during surgery, surgical site infection or wound dehiscence required reoperation. Complication rates were quantified for each group. The association between use of antiplatelet drugs and complications were studied using chi-square test and the strength of this association was measured by calculating relative risk (RR). Statistical analyses were performed by using SPSS Statistical package.

RESULTS

A total 336 procedure were performed, 61 patients continued aspirin treatment perioperatively and 63 patients continued dual antiplatelet therapy (aspirin + clopidogrel). Study consist of 215 males (63.98%) and 121 females (36.01%): (131 males and 81 females in control group, 43 males & 18 females in aspirin group, 41 males and 22 females in dual antiplatelet group). The average mean age was $48 \pm (\mathrm{SD} \pm 10)$ for control group, $59 \pm (\mathrm{SD} \pm 10)$ for aspirin group and $63 \pm (\mathrm{SD} \pm 10)$ dual antiplatlet group. 51.48% (n=173) ganglion operated on left side of hand and 48.53% (n=163) on right side; 78.57% (n=264) ganglion present on dorsal side and 21.42% (n=72) on volar side. 18.75% (n=63) were diabetic and 81.25% (n=273) were non-diabetic. All baseline characteristics and complications were shown in Table.

	Non-aspirin group (n = 212)	Aspirin group (n =61)	Dual antiplatelet group (n = 63)	p-value
Mean age	48	59	63	
Sex				
Male	131	43	41	
Female	81	18	22	
Diabetic	32	19	12	
Operating Site				
Left	104	31	38	
right	108	30	25	
Dorsal	166	50	49	
Volar	46	11	14	
Complications				
Bleeding	0	0	4	
Infection	1	1	2	0.11
Hematoma	1	1	4	0.009
Wound dehiscence	5	1	1	0.009

Table 1. Baseline Clinical Characteristics of Patients in the Entire Study Group and Complications

Intraoperative bleeding was easily controlled, and postoperative bleeding was recorded in 4 patients who used dual platelet therapy. They complained of subcutaneous hematoma (RR=16.82, 95% CI 2 -141.38, P=0.009) but no additional treatment was needed. In aspirin group, postoperative bleeding did not occur; but hematoma develops in one patient of each control and aspirin group. Total 7 patient develop wound dehiscence, 1 patient in

control group, 1 patient from aspirin group and 5 patients from dual therapy group (RR=16.82, 95% CI 2-141.38, P=0.009). 4 patients develop infection, one patient from each control and aspirin group and 2 patients from dual therapy group (RR=6.92, 95% CI 0.62-73, p=0.117).

DISCUSSION

In case control study of patients taking daily low dose aspirin, an increased risk of myocardial infarction was noted in patients who discontinued aspirin therapy.[8] Furthermore, the mortality associated with acute coronary syndrome has been shown to be increased in patients who have recently discontinued aspirin therapy whether used for primary or secondary prevention.[9] In 2 studies of ischemic stroke, nearly 5% were associated with recent withdrawal of antithrombotic medication. Physician directed discontinuation during the perioperative period was the reason for medication withdrawal in nearly 50% of patients.[10,11] Therefore, we choose to conduct this prospective cohort investigation while maintaining our group's established clinical practice of continuing prescribed antiplatelet therapies.

Our results are similar to those of Edmunds and Avakian who reported on 64 operations in patients undergoing hand surgery and one cubital tunnel surgery while continuing prescribed clopidogril.[12] The impact of perioperative antiplatelet medication has been investigated outside of hand surgery. Ljiljana et al shows similar result that bleeding related perioperative complications were rare when continuing antiplatelet medications without interruption for hand and wrist surgery, bleeding may be greatest in patients taking higher dose antiplatelet medication.[13] A prospective study of peripheral artery surgery reported no difference in reoperation or postoperative hematoma formation between those patients on antiplatelet regimens, including aspirin or combined aspirin and clopidogril, and controls taking no platelet agents.[14]

Our study shows that there are no significant differences between aspirin and control group. There were no major complications in patients whom aspirin continued as described in other studies. But the difference between dual antiplatelet group and control group is quite significant. Post-operative local hematoma, infection and wound dehiscence are significant in dual antiplatelet therapy. However each hematoma was asymptomatic and resolved spontaneously. Bleeding during surgery is quite significant in dual antiplatelet therapy. Although bleeding complication between dual antiplatelet group and aspirin group appears significant but statistically it's not proven.

Continuation of antiplatelet therapy alone does not influence the final outcome, however use of dual antiplatelet therapy increased complication like hematoma and wound dehisces and hematoma.

CONCLUSION

In conclusion, our study shows that we can continue antiplatelet aspirin therapy during hand ganglion surgery. Several limitations are inherent in our study. This is observational study, rather than a randomized control trial and therefore assumes a risk for bias associated with inequalities between cases and controls. The fact that antiplatelet patients were older, may have biased us towards finding more ecchymosis and haematoma in the antiplatelet group given age related changes in the soft tissue. In our study, no patient was on thienopyridine drugs in monotherapy antiplatelet group. So, we are unable to do compare between these two antiplatelet drugs.

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