

ROLE OF AGNI- KARMA IN CRANIOPLASTY: A CLINICAL REVIEW STUDY

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ABSTRACT

Purpose - Surgical equipment used in neurosurgery that affects wound healing & minimizes complications seems to be a popular investigations topic. The aim of this study is to evaluate the effect of Agni-Karm for sterilization on a piece of skull in Cranioplasty. Total 60 consecutive Craniotomy done patients were evaluated prospectively. Electro surgical cautery & hydrogen peroxide + providone iodine solution was used in 30 patients & Agni-karm (Direct heat given to a piece of skull on spirit lamp) done in 30 patients. In the post-operative period - vacuum drainage amount in days, duration of time for surgery and callus formation time in the skull were recorded. Complications like surgical site infection, haematoma & flap necrosis were determined. Age & size of a piece of skull were similar in each group. Mean drainage duration was 3 days in Agni-Karm (Direct heat given to a piece of skull) i.e. Group –A Trial group & 5 days in electro surgical cautery & hydrogen peroxide + providone iodine solution i.e. Group –B- Control group. There is no statistical significance between the both groups & were same regarding amount of blood loss & recovery time. But there was statistical significance between the both groups, in duration of serous drainage, surgical site infection & duration of surgical time, were considered. Direct heat to a piece of skull (Agni-Karm) resulting 100% sterilization & shortens the drainage amount & surgical time compared, with use of electro-surgical cautery & hydrogen peroxide + providone iodine solution over it, to sterilize.

KEYWORDS: Agni-Karm, Electro-surgical cautery, Ayurveda Principle & Cranioplasty.

INTRODUCTION

क्षारादग्निर्गरीयान् क्रियासु व्याख्यातः,
तद्गन्धानां रोगाणाम् पुनर्भावाद्भेषज शस्त्रक्षारैरसाध्यानां
तत्साध्यत्वाच्च॥

सु.सू.12/3

There will be no recurrence of diseases, which treated by Agni-karma & those diseases which not cured by medicine, surgery & kshar-karma, those diseases will definitely cured by Agni-karma only. So Agni-karma is greater than kshar-karma.

अग्नि तप्तेन शस्त्रेण छिंद्यान्मधूसमायुतम् ।

सु.चि. 2/46

Incision should be taken by the honey coated, heated knife. Means- any thing burnt by fire, it becomes sterilize & there is no chances of wound dehiscence, says Shushruta.

अग्नितप्तेन शस्त्रेण छिंद्यात् अन्यथा
अतप्तशस्त्रेच्छेदने पाकभयं स्यात् । डल्हण

Moreover, the studious criticizer of Sushruta, Dalhan says- if not follow this rule & incision taken without honey coated, heated knife then there is a high chances of infection & pus formation.

Generally we can say, for sterilization, we should use the heat to avoid incisional wound infection.

According this version – it proved that all groups of bacteria, viruses, fungus, parasite, burn by direct heat, there is no chances of growing of their colonies. Burnt area becomes totally sterilize & this method of sterilization is most reliable & powerfull, even today also, what Sushruta elaborated in his scripture, 'Sushruta-Samhita'. So in the most of the operation theater of the world, O.T. staff burnt the instrument trolley prior to every surgery with spirit swab.

It is quiet reliable as well as easy procedure, rather than any sterilize procedure available today on the earth.

Our main point is that – use of Agni- karma / Cauterization directly over a piece of skull prior to cranioplasty which is kept in anterior abdominal wall, after Craniotomy. Mainly Craniotomy done for to decompress the brain & removal of the tumours & for other indications. Here no point to go deep about Craniotomy.

When I was working with my colleague Dr. Swapnil Patil (M.Ch.-Neuro Surgery), he was routinely cauterize the edges & flat part of a piece of skull by electro-surgical cautery. I was surprised first time & asked him, why are you doing this? So he answered me the logic behind that procedure & told that, all his professors, seniors are doing this because of not only destroyed the colonies of bacteria but also help for good & quick callus formation. Then, I told him, that the principle of all these things / logic are described by Sushruta in his scripture. So he surprisingly stared at me & ask for proper citation. So I shown him this above version as a evidence. By this, he impressed so much, then he inspired me to write a research paper over this topic. That's why I wrote this paper. Again I asked Dr. Swapnil Patil that, Is there any references anywhere in your modern neurosurgery books? Says'No'. My further questions to him, then, How your professors, seniors using this method? Don't know, can't explain, says Dr Swapnil Patil, only due to using by them, I am also following & end result is good, so I continueing. Then, I have given above evidence as citation to him.

All these conversation between me & him was held during cranioplasty. One important point is to be noted here that, unknowingly modern neurosurgeons following the Agni-Karm by electro-cautry. On the basis of previous successful experienced & experiment. The basic principle from Ayurveda, this is one evidence. So I told Dr. Swapnil, that, why we should not directly burn this piece of skull on spirit lamp ? For better result, then, he get confused & after series of discussions regarding advantages & disadvantages of directly burn process, finally he allowed.

So upto some certain time, we burn the piece of skull direct on spirit lamp to save the surgery & anaesthesia time & to burn entire area of both side of piece of skull & edges.

After direct heating, we got that piece at room temp. by dipping in NS water for a minute. Once the heat gone then, we place that piece at it's proper place i.e. on the brain & sutured scalp in layer & in routine manner.

By this again, Maharishi Sushruta goes high up in my mind. How great he was! & my heart fill with proud that for being a Ayurveda surgeon. That's why Sushruta called as a 'father of Surgery'.

This procedure again proved that if modern science & principle of Ayurveda come together, that will be more beneficial for entire humankind. Next to this, I added & suggested him, direct Agni-Karm on a piece of skull will be more beneficial for sterilization than electro surgical cautry. Sushruta has described much more techniques regarding neuro surgery.

Moreover-

उर्ध्वजत्रू विकारेषु विशेषान्नस्यमिष्यते I

नासा हि शिरसो द्वारं तेन तद व्याप्य हन्ति तान II

अ.ह.सू.20/1

Means - Nasal cavity is main gate of brain to enter. For the treatment of Shiro-Rog or for the treatment of brain or to reach to brain, the nearest direct route is from nasal cavity. Brain can be easily accessible through nasal cavity. To get easy entrance in the brain through nasal cavity is more safer & that's why now a days manymore neurosurgeons are preferring this route for brain surgery through nasal cavity by endoscopes in abroad. But Sushruta has already described this route 3000 years back. This proves that, in that era also, Sushruta was successfully performed brain surgeries. With this techniques, patient gets good & fast result, early recovery, less chances of infection & pus formation.

Result of monopolar electro surgical cauterization to a piece of skull was satisfactory, but I was not. Still I thought for more, that due to cautry, entire area of a piece of skull was not cauterize because cautry point is small & if one tried to cauterize entire piece, it takes muchmore time & surgical + anaesthesia time will also increase.

AIMS AND OBJECTS

To evaluate the efficacy of Agni-Karma (Direct heat) to a piece of skull in Cranioplasty & saving of surgical & anaesthesia time.

MATERIAL AND METHODOLOGY

Material

Any patient who was previously operated for Craniotomy.

Methodology

- Total 30-30 patients were taken for this study.
- Informed consent forms were obtained from all patients.
- Remove a piece of skull from anterior abdominal wall.
- Scrapping the piece of skull by osteotome & remove all sloughs, debris, serous & pus flexs, if present.
- Washing that piece by NS water.
- Then -For Group –A (i.e. Trial Group) - Direct heat to a piece of skull by spirit lamp & dipping in NS water for 1 minute to get it at room temp.

- For Group –B (i.e. Control Group)- Cauterise by electro cautry & Dip that piece of skull in Hydrogen Peroxide + Providone iodine solution (after scrapping & washing) for 20 minutes (This is a usual method).
- After completing 20 minute, again that piece of skull washed by NS water.
- Till then open the scalp by knife & freshening the edges of the skull with the help of electro-cautry for good callous formation.
- Then a piece of skull is placed at it's native place & closure of scalp is to be done in usual manner.

Inclusion Criteria

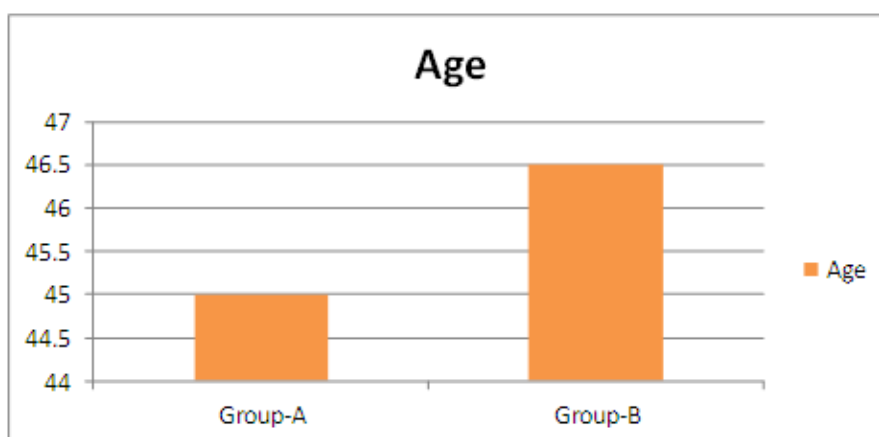
- Any patient who had previously undergone / operated for craniotomy.
- Age – Between 20-60 years.
- Haemodynamically stable patient.

Exclusion Criteria

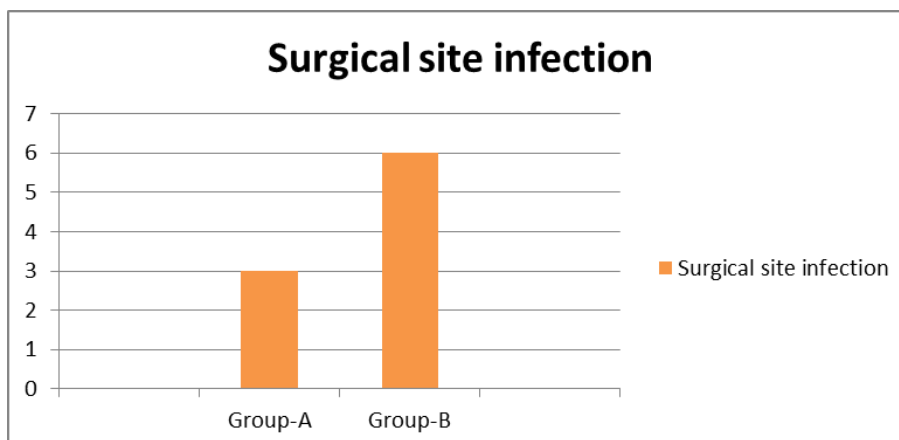
- Patient suffering from – Diabetes Mellitus,
- Hypertension,
 - Any other major medical problem.

Data Analysis**1) Age –**

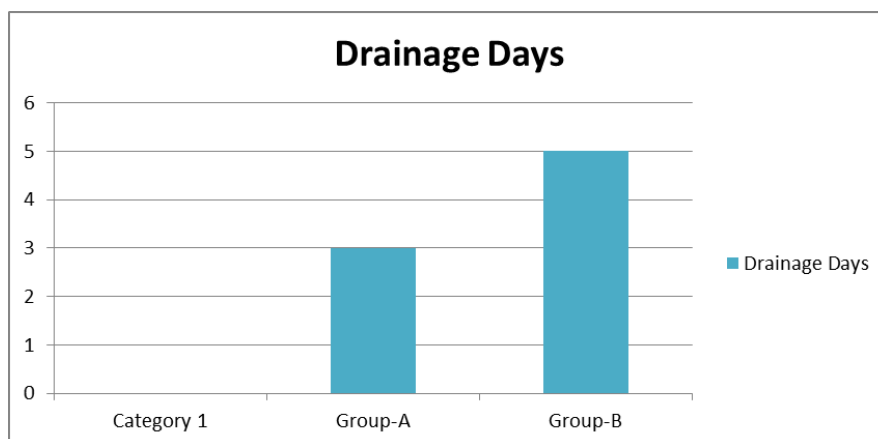
	Group-A (Control Group)	Group-B (Trial Group)
Age (Mean)	45	46.5

**2) Surgical site infection**

	Group-A (Control Group)	Group-B (Trial Group)
Surgical site infection	3	6

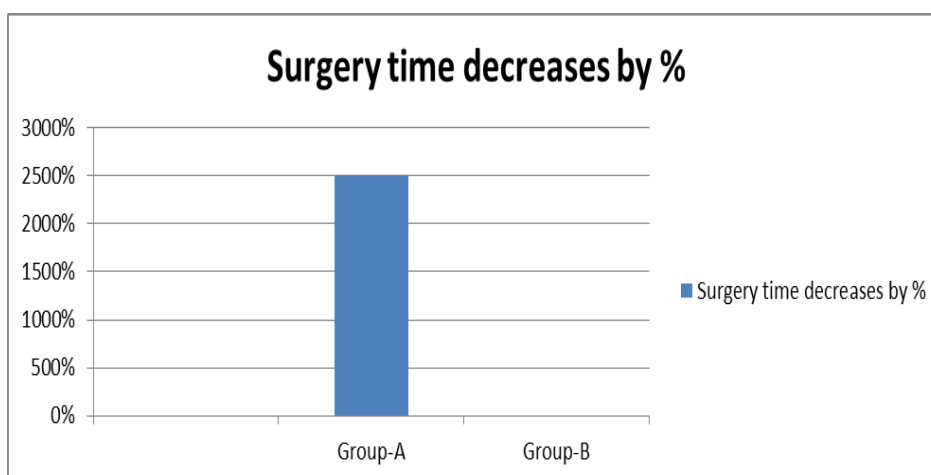
**3) Drainage days**

	Group-A (Control Group)	Group-B (Trial Group)
Drainage days	3	5



4) Surgery time decreases by –

	Group-A (Control Group)	Group-B (Trial Group)
Surgery time decreases by	25%	0%



DISCUSSION

As this method of Agni-Karm is new for modern medical science, but wise person should adopt it. It has a scientific base & also illustrated in our Ayurveda scripture. Now a days, there are many methods, chemicals are available to sterilize the surgical site & instruments. In old era, there were also many methods of sterilization were available like Dhooan (Fumigation) of various Varti, Agni-karma & Mantra Chanting. Now its proves that these old methods of sterilization are effective without hazardous to our health. Application of Ayurvedic principles in day to day practice & try to prove it on scientific basis is a need of time. So I tried this Agni-karma process in Cranioplasty & got a very positive result. And I also greatfull to my colleague Dr. Swapnil Patil for his faith on me. Only due to his support I completed this task & this paper could see the today's light of the day. Because without of his help, it will quiet impossible. There are much more things to do & apply & take a experience of practically possible fundaments of Ayurveda. Ayurveda is a ocean of knowledge & ideas. So one should collect the various gems of new innovatives ideas, motivation from Ayurveda & facilitate it's utility for entire humankind.

Further studies are needed to confirm this data and to ensure that the use of this technique of direct heat to the piece of skull is not liable to damage.

RESULT

1. Mean age are 45 & 46.5 years for Group-A & B respectively.
2. Surgical site infections, only 3 patients & 5 patients in Group-A & B respectively.
3. Vacuum drainage continues over operatives day 3 & day 5 for Group-A & B respectively.
4. Total surgery time saved by 25% & 0% in Group-A & B respectively.

CONCLUSION

The proposed technique of Agni-Karm is simple, safe and inexpensive method for not only instant sterilization of a piece of skull but also for saving the surgical & anaesthesia time in Cranioplasty. Moreover, it might facilitate early callus formation in the skull.

Definitely, Agni-karm is more significant than Hydrogen Peroxide + Providone iodine solution for

instant sterilization during surgery and also for avoiding the complications in Cranioplasty.

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