Letter to Editor

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Thrift Shop Hemostasis: I'm Going To Pop Some Hemostats, Only Got 20 Dollars In My Pocket!

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Letter to the Editor

We had read a very interesting research article by Pallavan et al. about using disposable syringe barrel made plastic clips which are extremely economically viable [1]. This technique would indeed be a great help to young neurosurgeons working in economically challenging conditions. The authors describe in detail the method of fashioning these clips from 2 ml plastic syringes while in the operating theatre and share their experience of using these in 21 cases with no wound complications **(Figure 1)**.

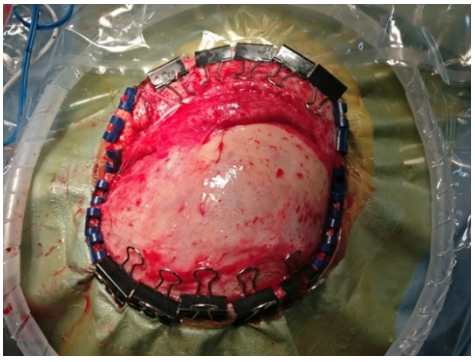

Figure 1 Intra-operative photograph of binder clips and raney clips being used in the same case showing non-superiority of either and adequate haemostasis in both.

However, while the effort is commendable to say the least, there are similar ideas which were overlooked. We recently described the use of stationery clips as haemostasis alternatives to the Raney clips [2]. Equal to the Raney clips in effectiveness their use lead to no wound complications. The force of closure was shown to be equivalent to the Raney clips in terms of force applied as measured by the Force Sensitive Resistor (FSR400, sensitivity 0.2e 20 N, Interlink Electronics Inc., Camarillo, California, USA). Again, while the authors say the cost of the plastic syringe fashioned clips is 5 INR for 4 clips, they fail to mention that each of these syringes are disposed after each surgery. While the stationary binder clips cost 20-25 INR/clip depending on the size, their re-usability will considerably divide their cost. There has even been a randomized controlled trial in India using these clips in 76 cases and there was no difference in the wound outcome at follow-up [3]. These clips have even been described in maxillofacial surgery for bi-coronal incisions [4] **(Table 1)**.

Table 1 Comparison of stationary binder clips to plastic syringe clips.

Aspects	Stationary binder clips	Plastic syringe clips
Cost	20-25 INR/clip: re-usable, hence the final cost is negligible.	5 INR/4 clips
Availability	On demand: bought as local store/online	Needs to be made after scrubbing before each case
Applicability	No applicator needed, in-built	Applicator required
Variety	Plethora of sizes	2 ml syringe, small, non-adaptable
Reliability	Over a 100 years of experience	New, but effective
Clinical testing	Randomized controlled trials in neurosurgery, case series in maxillo-facial surgery	Case series in cranial surgery
Cautery usage	Required in some instances	Required in some instances

It is only a logical inference that procurement of stationary clips is more ergonomic than cutting syringes using scissors in a wavy fashion after scrubbing for a neurosurgical case. Since, all the authors describing these methods wish for the same final goal of easy adaptability of these clips as an replacement or

alternative of Raney clips, ergonomics and reproducibility will be turnkey factor. Applicability of paper clips has been tried and tested over a 100 years now since its introduction in 1915. Essentially it is a tiny sheet of steel that is folded to act as a binder for bundles of paper. The tensile properties of the metal itself are used for application of pressure. It does not use a spring mechanism, unlike other stationery clips. While its natural position is to remain closed, it can be opened by an attached handle, which can be rotated to fit the bound article snugly. This opening precisely gives it an advantage to the plastic syringe model. While the application of plastic syringes might need an applicator, stationary clips come with an inbuilt mechanism. Again, the diameter of plastic clips and hence applicability to variable thickness, designed flaps might be limited, paper clips come in all sizes and shapes, increasing suitability.

We applaud the efforts of the authors and such ideas are the genuine need of the hour in a resource limited setting, like ours. Further efforts in other areas of surgery are needed to develop indigenous low cost solutions that are equally efficient and adaptable. If there is anything that history has taught us, it's that allowing oneself to think out-of the box leads to extraordinary results [5].

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