Custom made filter card for cytopsin: A high fidelity economical alternative

Sir,

Cytospin is a cell preparation system using centrifugal force to concentrate the cellular elements and deposit them on the slide that improves the diagnostic ability. Modern cytocentrifuge is a microprocessor-controlled spinning system with mechanical elements to absorb the residual fluid and to deposit the concentrated cells on the defined area of the slide.

The functional mechanical elements include a cytofunnel to hold the fluid, absorbable filter card to absorb the residual fluid, and a cytoclip to fix the paper and the glass slide to the cytofunnel.

Of all these elements, absorbable filter card (Filter Cards for Shandon™ Thermo Fisher Scientific, India, Ahmedabad) is a single-use consumable. This is a thick absorbent card made of cotton and cellulose blend. Holes are punched for cell deposition on the glass slide. These filter cards cost about ₹ 40 per piece (as per the quotation given to our hospital).

In order to reduce the cost and establish sustained local supply, we looked into possible alternatives for these filter cards. The exact properties of this filter card were not available to us.

After experimenting with several papers that had different properties, we zeroed on a handmade coarse paper with a thickness of 300 GSM that demonstrated absorbing capabilities of the filter card. This paper was cut and fashioned to the size and shape of the filter card that was used as the template. The paper we used was only half the thickness of the filter card and hence a wide strip was folded to double the thickness. Holes were punched in the prepared filter strips to match the filter card template [Figure 1a].

These paper strips were used in the place of filter card without any change in the technique. The results obtained with the new filter strips were similar to the commercially available filter card [Figure 1b].

The filter strips we prepared were cut out of a B3 size sheet costing ₹ 20 per sheet. Approximately 80 filter strips can be obtained with one such sheet. Hence, each filter strip we had prepared would cost only about 25 paise.

Our experiment has resulted in decreasing the financial burden on the patients and sustained availability of the filter strips, as it can be obtained locally on demand.

Challenges faced during introduction of this filter strips were the doubts about the final cell preparation. After several cycles of usage, such an apprehension receded and resulted in almost all the body fluids being processed with cytopsin in our lab.

In conclusion, thick absorbable handmade paper can be fashioned to mimic the commercially available filter cards and used in cytopsin to obtain the same result. This ensures easy and sustained availability of this consumable and decreases the financial load on the patients as well.

Figure 1: Comparison of commercially available filter card with custom-made filter strip (a) Comparison of physical forms of filter card and filter strip (b) Comparison of cell preparation using filter card and filter strip (MGG, ×100)
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Conflicts of interest
There are no conflicts of interest.

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