

SO MUCH TO DO WITH SO LITTLE: A QUALITY IMPROVEMENT (QI) STUDY TO MAKE GOOD QUALITY CELL BLOCKS

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Category: Quality, Cost, Value

Background

Cell blocks are widely used in cytology for aiding in Fine Needle Aspiration (FNA) biopsy diagnosis and for ancillary testing including special stains, immunohistochemistry and molecular studies. There are many ways to make cell blocks and in our institution, when the material is scant, the Thrombin method is used. We noticed that the cell block quantity was limited and many times the cell blocks were acellular/ non-contributory. This QI study was initiated to correct and improve the adequacy and quality of the cell blocks with FNA cases.

Objectives

To use the Institute of Healthcare

Improvement (IHI) tools for QI improvement including the Ishikawa diagram, the PDSA cycle and make a change in practice using a systemats approach.

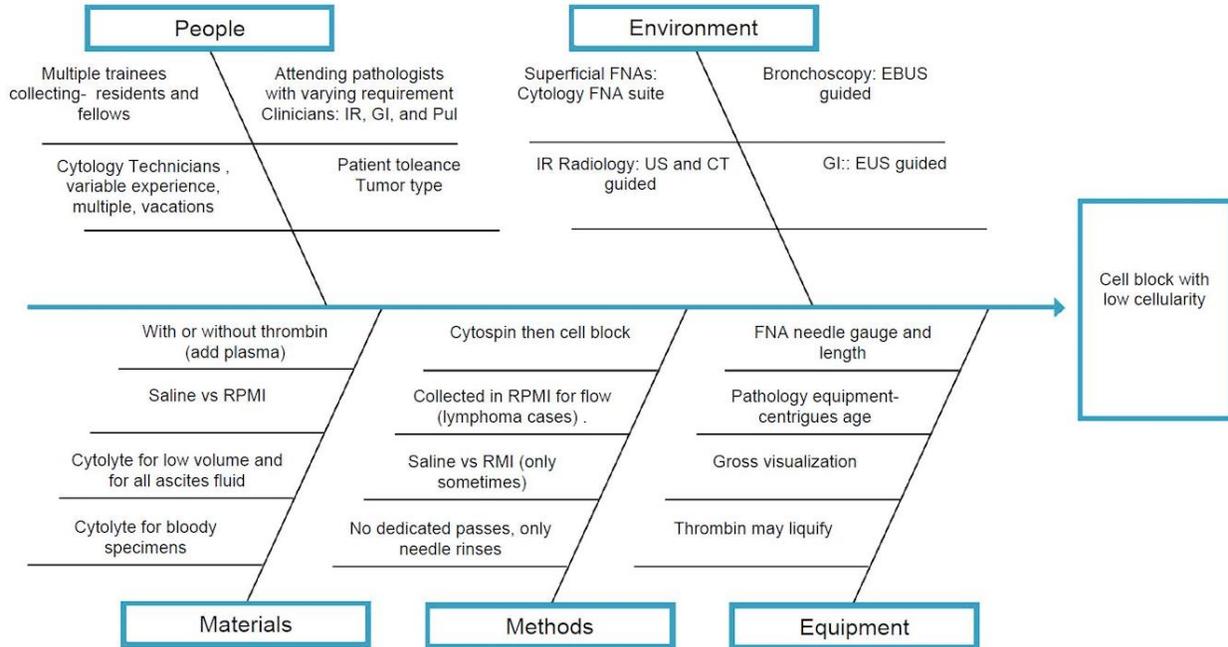
Methods

A team was initially formed and meetings were held with all involved to discuss potential causes for low cellularity of the cell blocks. An Ishikawa diagram was prepared with input from multiple people to study potential reasons for low cellularity. Baseline data was collected on 30 cases from pathology database to assess adequacy of cell blocks. After a consensus meeting with all the staff and trainees, who were at the frontline in collecting and preparing the material, a PDSA cycle was made (Plan), a change was made in the practice (Do) and post-change data was collected in 30 cases (Study). The change included collecting at least 2 designated additional passes, in addition to needle rinses for cell blocks. Needle size, needle length and number of designated passes performed were documented. Consecutive cases were included to avoid any selection bias. All the trainees (fellows and residents) were educated in the change and instructed to request at least 2 extra designated passes for cell block preparation based on patient tolerance.

Results

Multiple potential causes for low cellularity including experience of the trainees, the cytotechnology technical staff, the clinicians, nodule size, needle type used, etc. were identified (Figure 1). Before the change, 15 of 30 cases (50%) had non-contributory cell blocks due to low cellularity. After the change, only 9 of 30 (30%) cell blocks were non-contributory with a median of 2 designated passes and average of 1.8 passes/cell block.

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Discussion

Using the IHI tools like the Ishikawa diagram and using the PDSA cycle, we studied the problem, implemented a change and measured the improvement. Persistently asking for designated passes for the cell block preparation led to improved cellularity.