

MEDICAL INSTRUMENTS-II

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Faults encountered in sectioning and remedial actions



Problems in section cutting



Cause	remedy
<p>A- When ribbon and consecutive sections are curved</p> <ol style="list-style-type: none"> 1-leading and trailing edges of block not parallel 2- blade blunt in one area 3-Tissue varying in consistency 	<ol style="list-style-type: none"> 1-trim with sharp scalpel until parallel 2-replace the blade 3-cool block with ice
<p>B-Alternate sections thick and thin</p> <ol style="list-style-type: none"> 1-Wax too soft for tissue 2- block or blade loose 3- insufficient clearance angle 	<ol style="list-style-type: none"> 1-cool block with ice or re-embed in higher melting point wax 2-Tighten block and blade 3-Slightly increase clearance angle
<p>C-Thick and thin zones parallel to knife edge(chatters)</p> <ol style="list-style-type: none"> 1- Knife or block loose un holder 2- Excessive steep knife angle 3-tissue or wax too hard for sectioning 4-Calcified areas in tissue 	<ol style="list-style-type: none"> 1- Tighten 2-reduce angle to minimum 3-use sharp heavy duty knife, use softening fluid on tissue 4-Rehydrate and decalcify, or surface decalcification

D- Splitting of sections at right angles to knife edge

- 1-Nick in blade edge
- 2- Hard particles in tissue
- 3-hard particles in wax

- 1-replace the blade
- 2-if calcium decalcify if other remove with care.
- 3- Re-embed in fresh filtered wax.

E- sections will not join to form a ribbon

- 1- Wax too hard for sectioning conditions
- 2- Debris on blade edge
- 3- knife angle too steep or too shallow

- 1-warm or re-embed in lower melting point wax
- 2-clean with xylene moistened cloth.
- 3- Adjust to optimum angle.

F- sections become attached to block on return stroke

- 1-Insufficient clearance angle.
- 2- Wax debris on blade edge.
- 3-debris on block edge.
- 4- Static electrical charge on ribbon

- 1-increase clearance angle.
- 2- clean with xylene- moistened cloth.
- 3-trim edge with sharp scalpel.
- 4- humidify air with moist bath near the knife. Place bunsen burner near knife .

G. Areas of tissue in block not present in sections

- 1- incomplete impregnation of tissue.
- 2- Wax block becoming detached.

- 1- return tissue to vacuum impregnating bath for a few hours or reprocess if fault is excessive.
- 2- re-attach with hot spatula.

H- Excessive compression of sections

- 1- Blunt blade
- 2- wax too soft for tissue or sectioning conditions

- 1- use different part or replace
- 2- cool block with ice or use higher melting-point wax.

I- Sections expand and disintegrate on water surface

- 1- Poor impregnation of tissue.
- 2- water temperature too high

- 1- return tissue to vacuum impregnating bath for a few hours
- 2- Cool

J- Sections roll into a tight coil instead of remaining flat on knife.

- 1- Blade blunt
- 2- section thickness too great for wax

- 1- Use different part or replace.
- 2- reduce section thickness or use slightly higher melting-point wax. Breathe on block as sections are being cut.