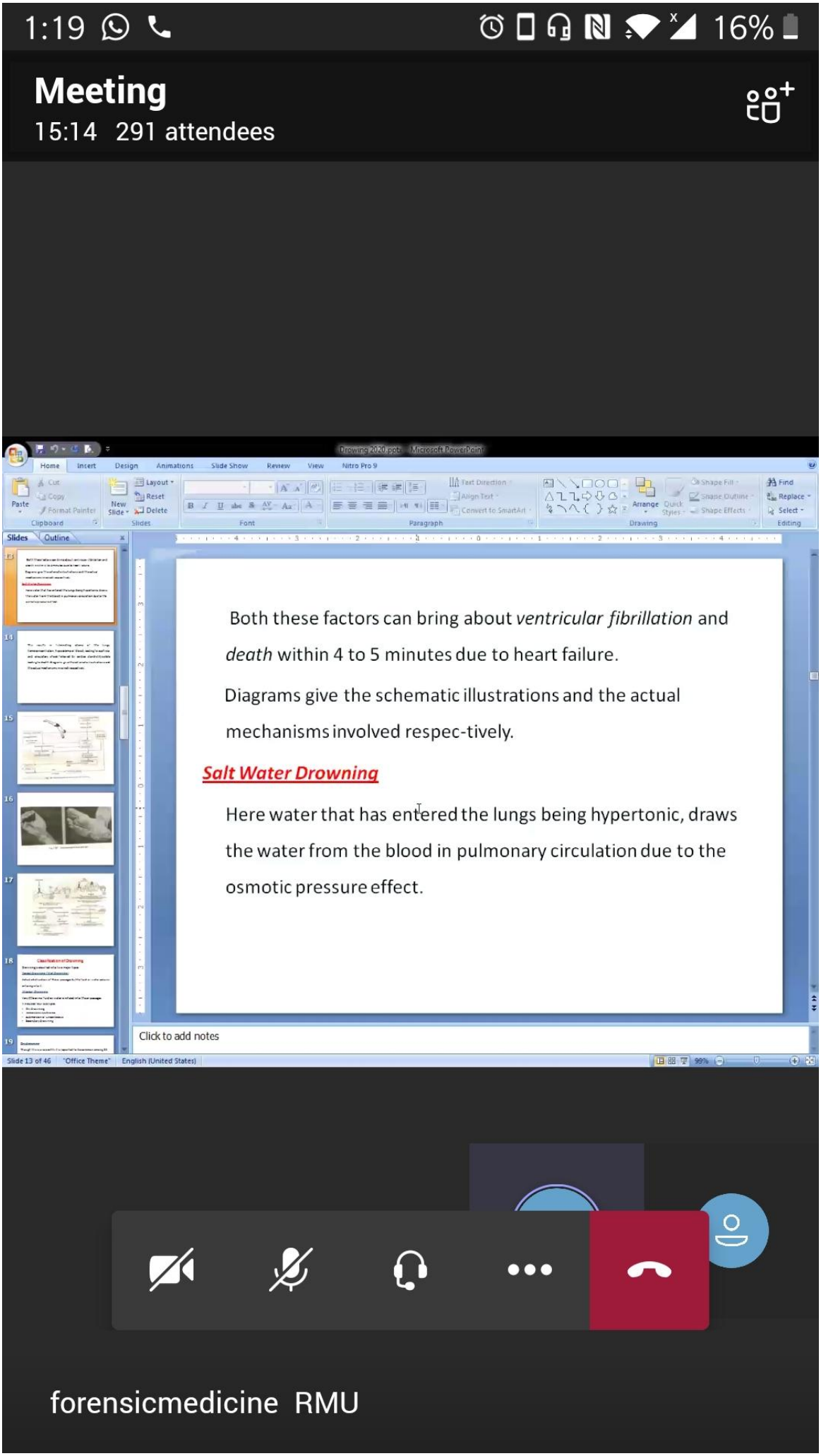
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Meeting
15:14 291 attendees
Both these factors can bring about *ventricular fibrillation* and *death* within 4 to 5 minutes due to heart failure.
Diagrams give the schematic illustrations and the actual mechanisms involved respec-tively.
Salt Water Drowning
Here water that has entered the lungs being hypertonic, draws the water from the blood in pulmonary circulation due to the osmotic pressure effect.
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Meeting

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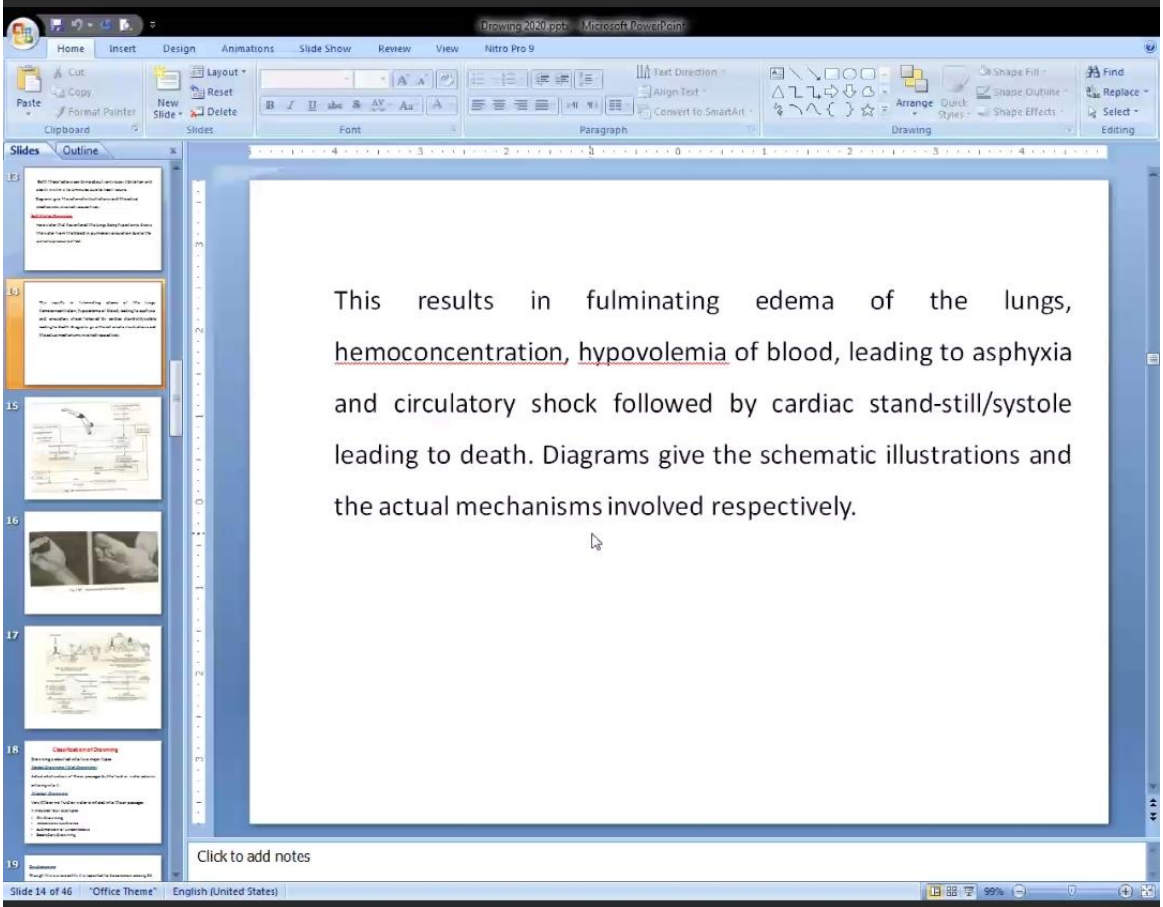

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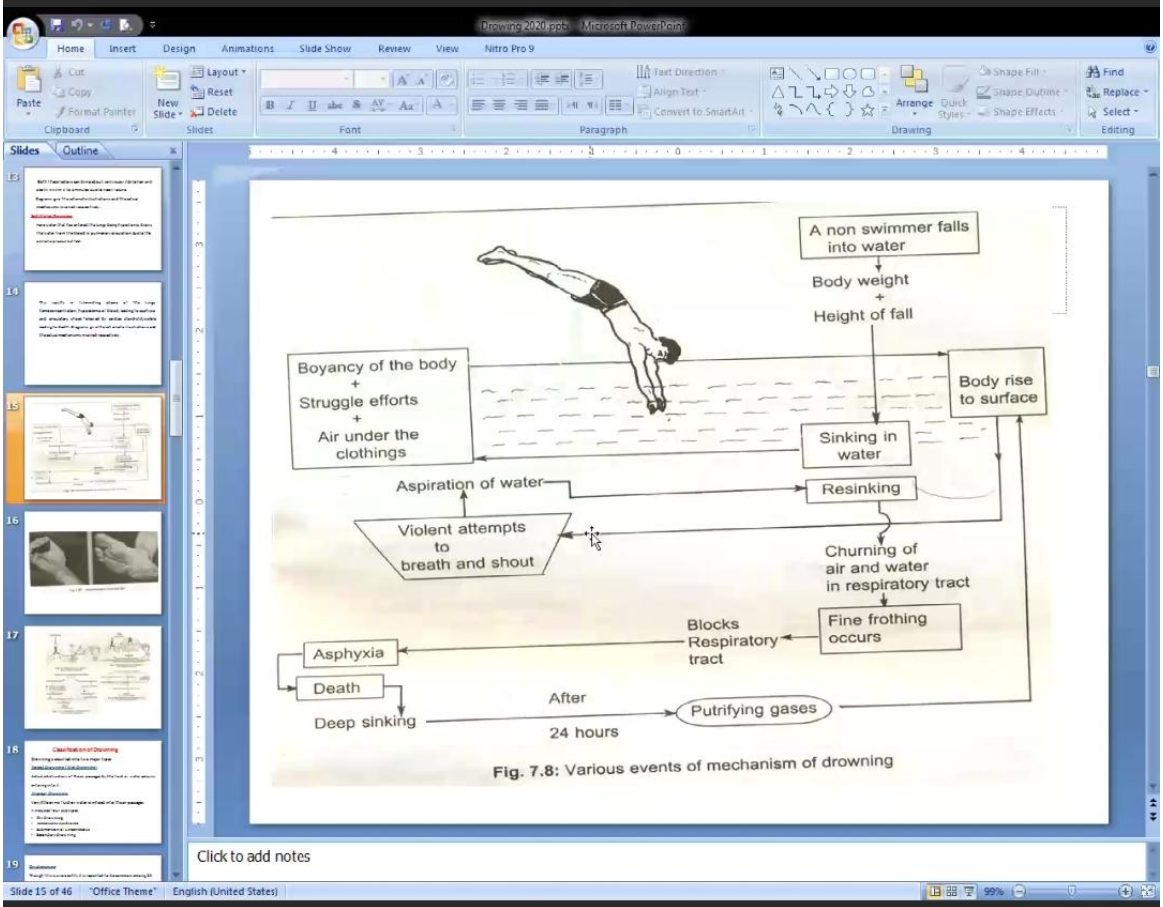
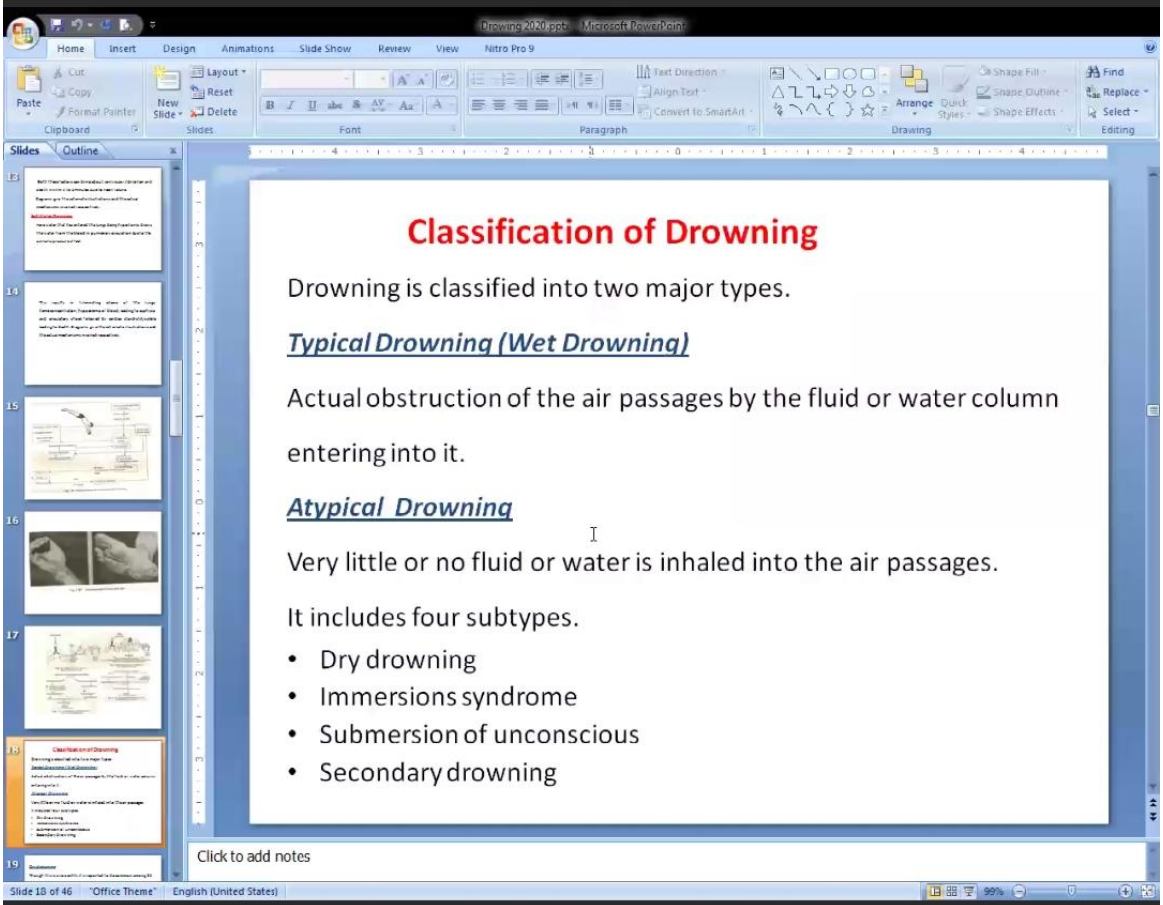
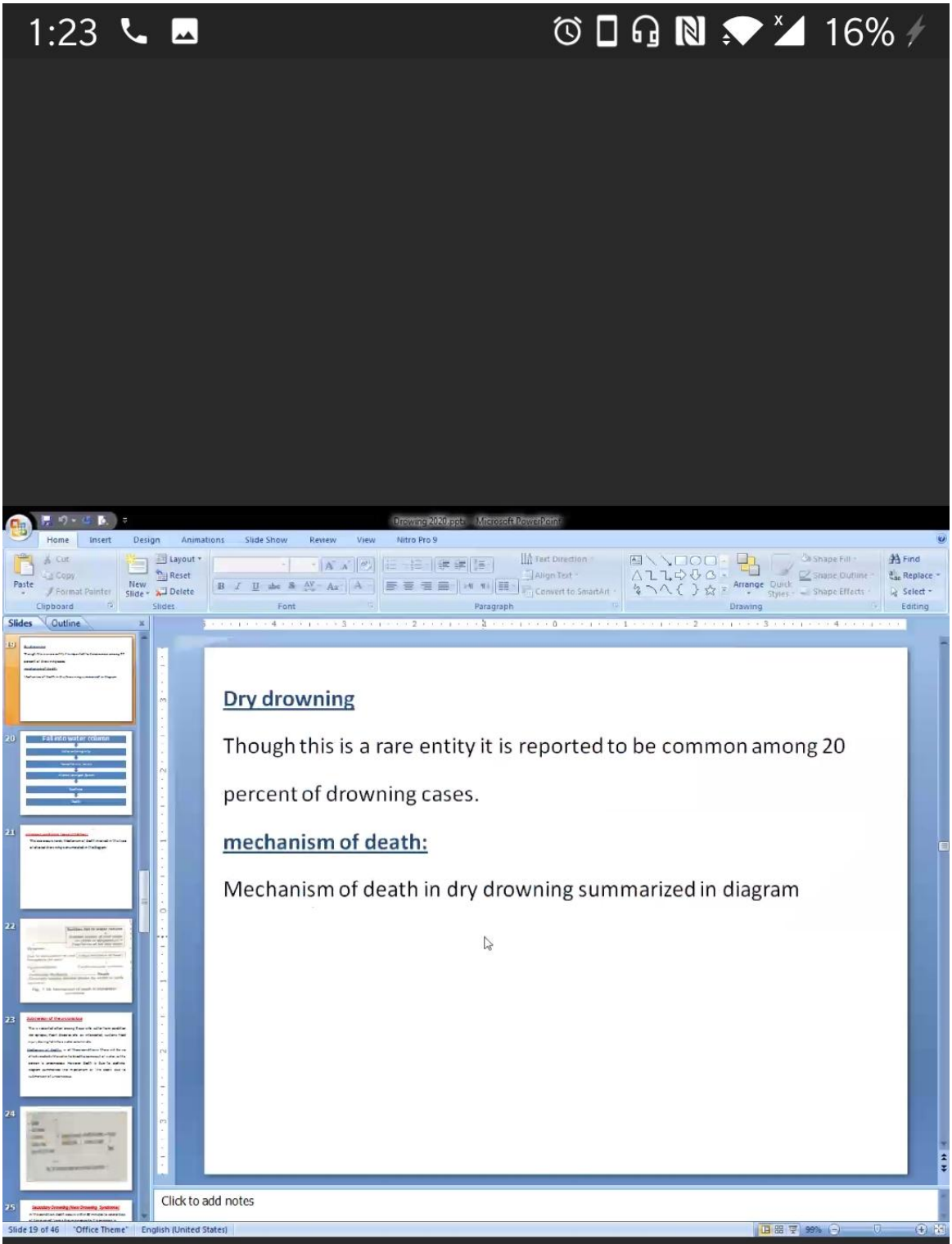


Fig. 7.8: Various events of mechanism of drowning

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Dry drowning
Though this is a rare entity it is reported to be common among 20 percent of drowning cases.
mechanism of death:
Mechanism of death in dry drowning summarized in diagram
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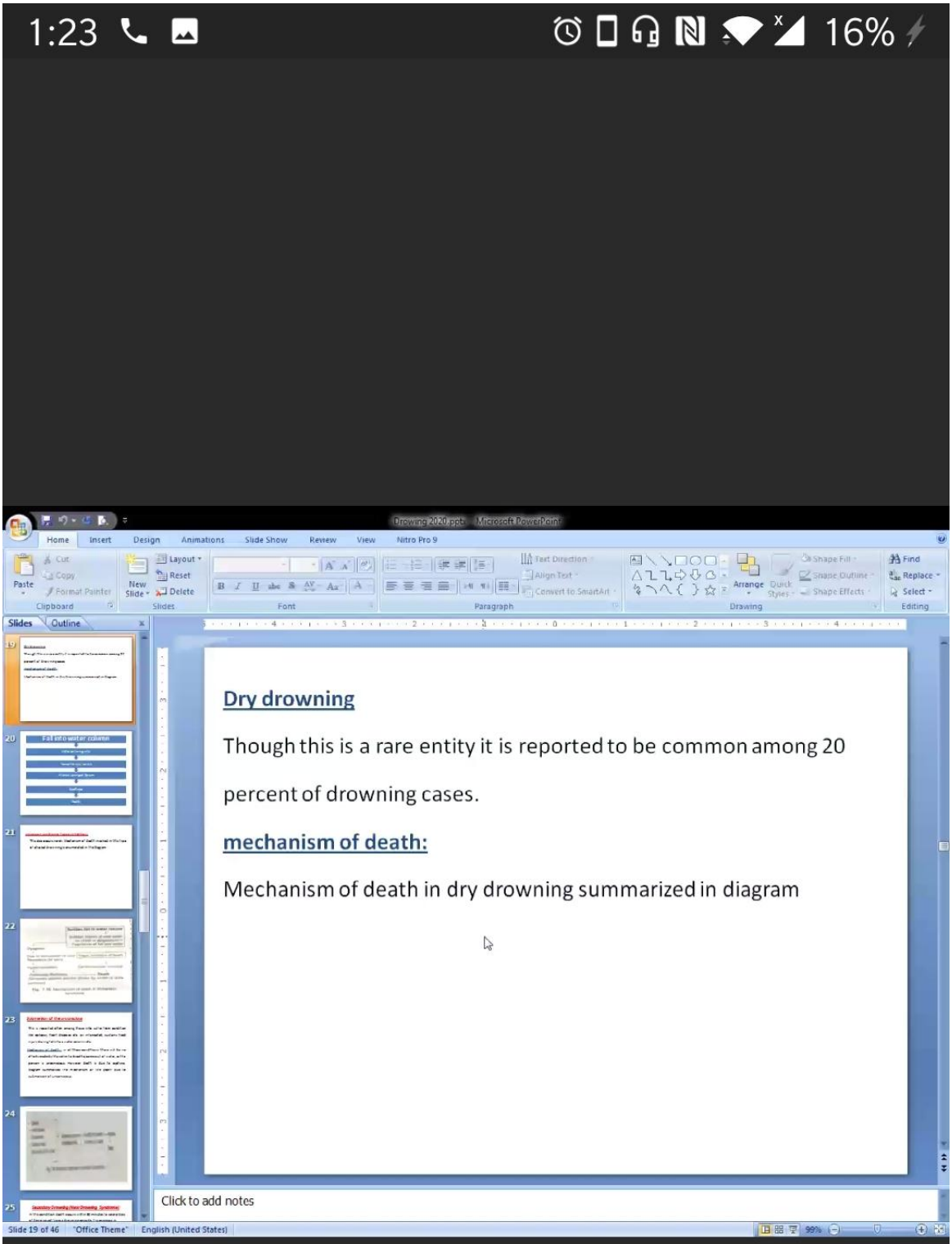
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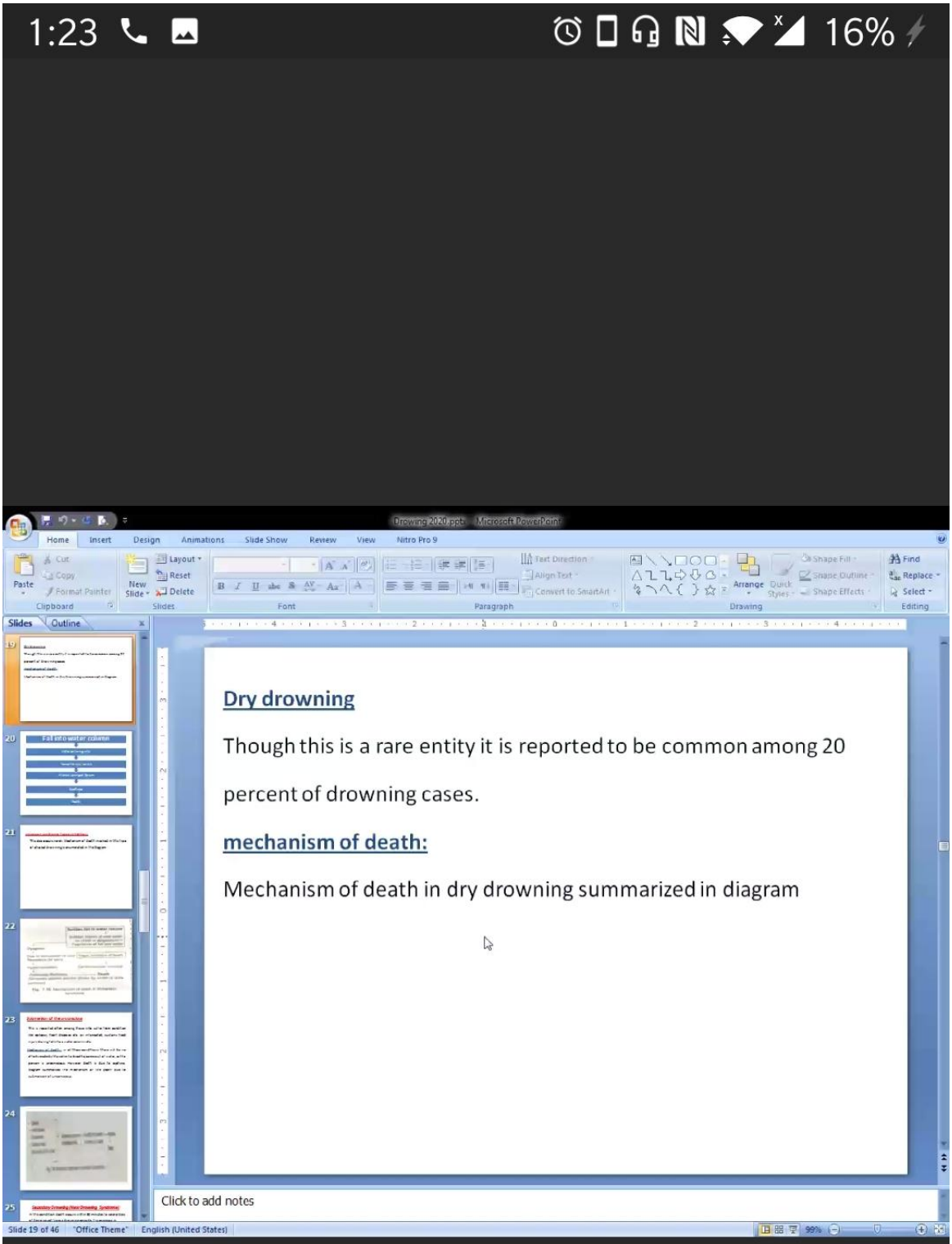
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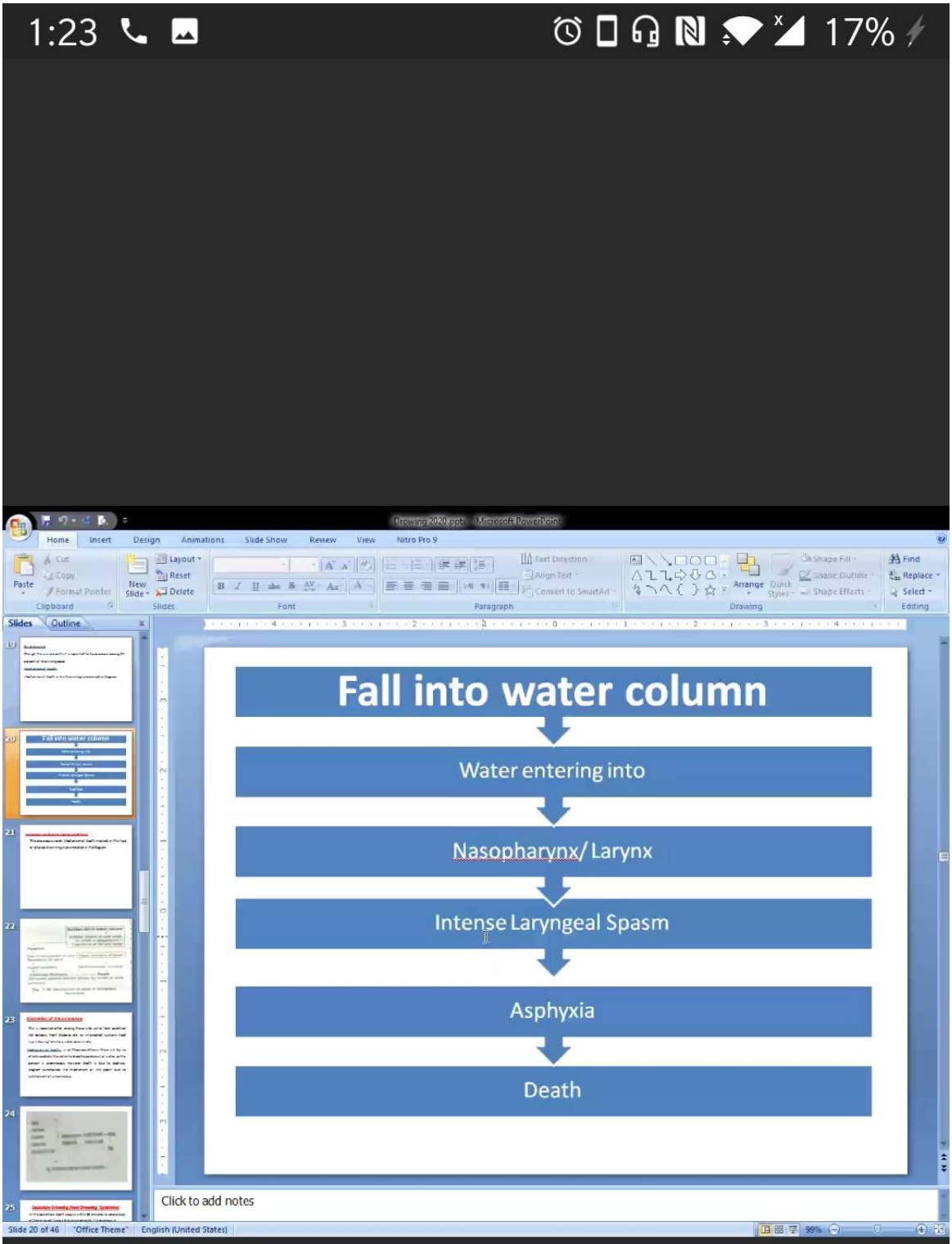
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Fall into water column
Water entering into
Nasopharynx/ Larynx
Intense Laryngeal Spasm
Asphyxia
Death
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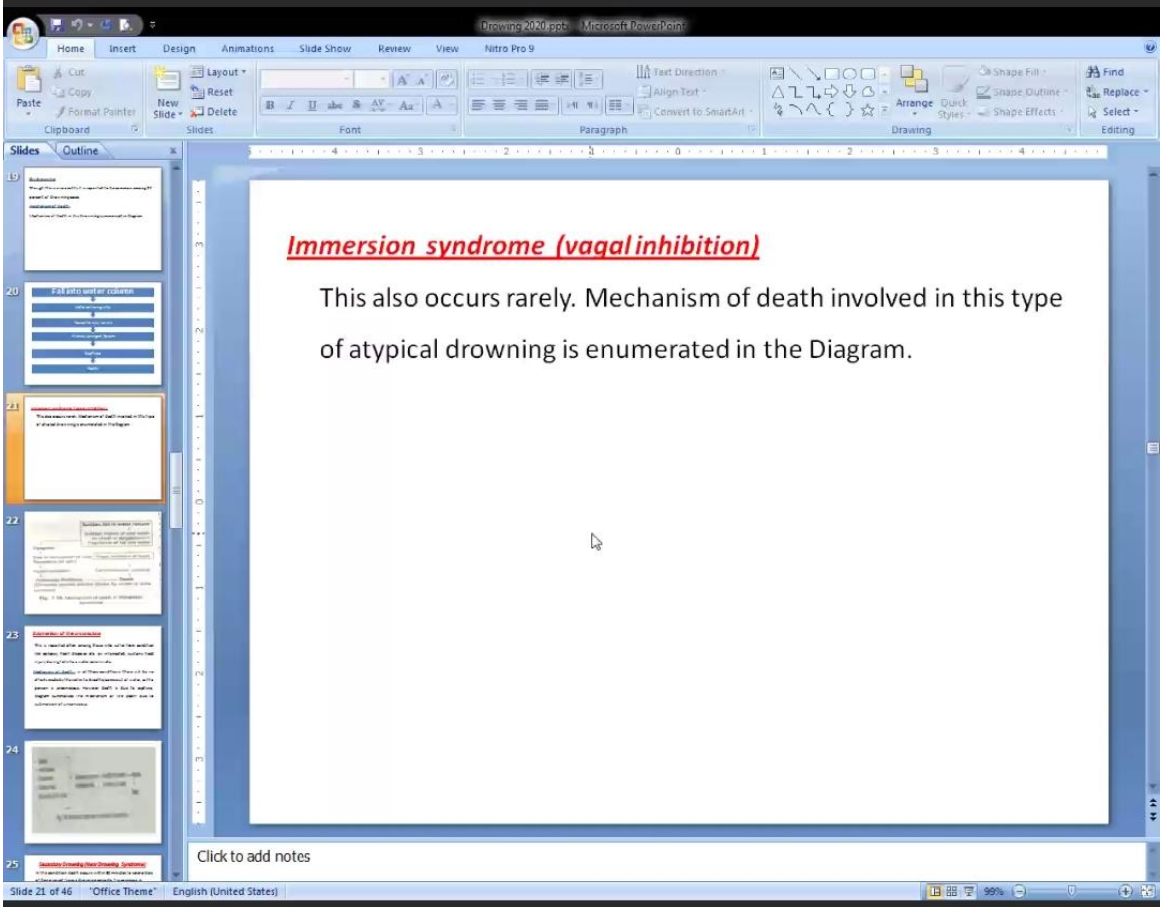

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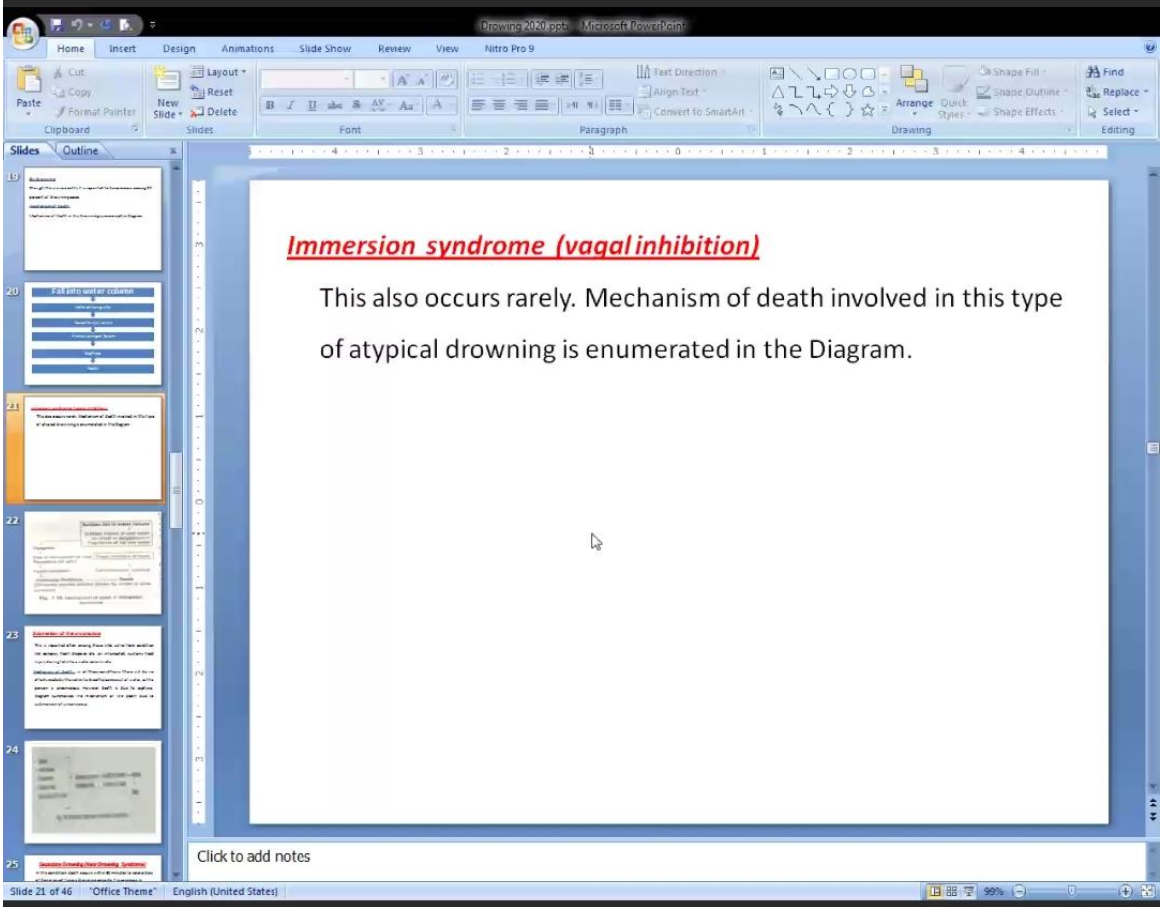

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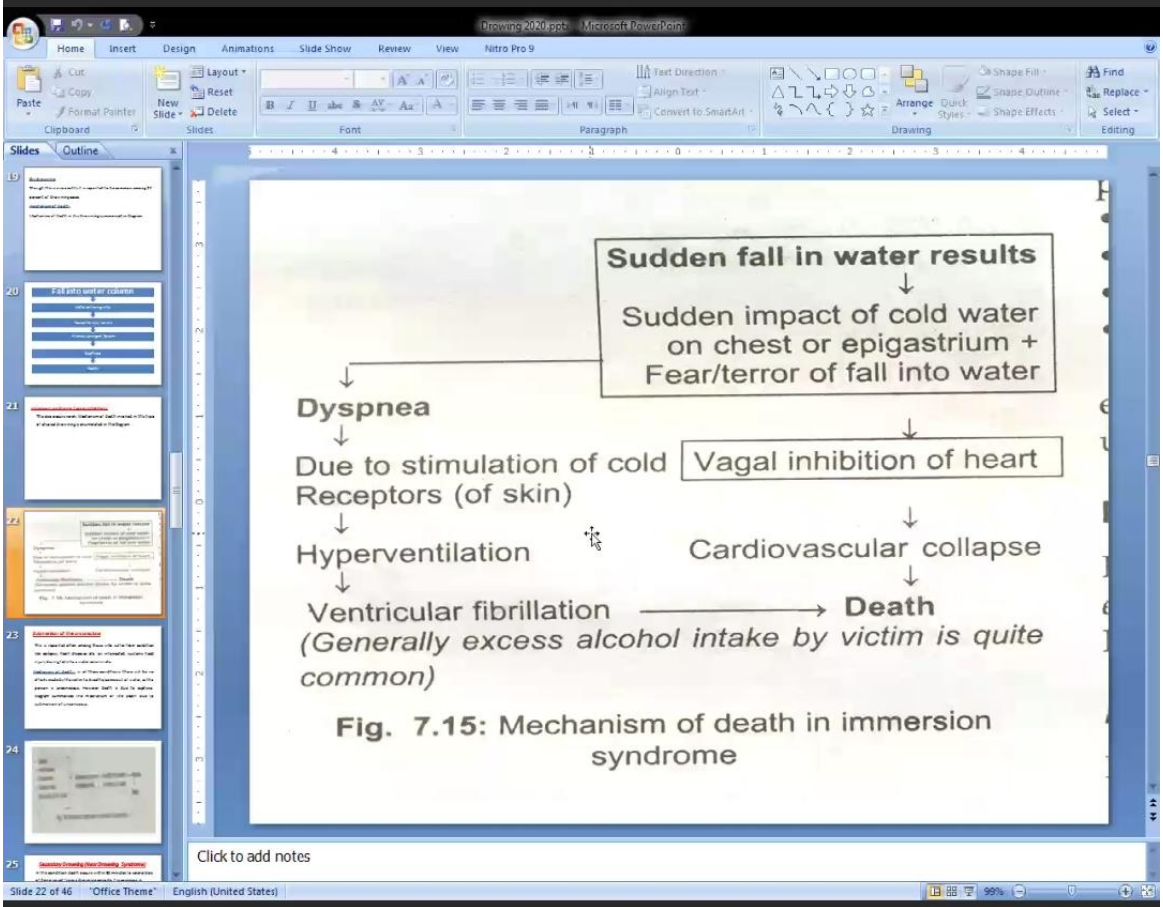

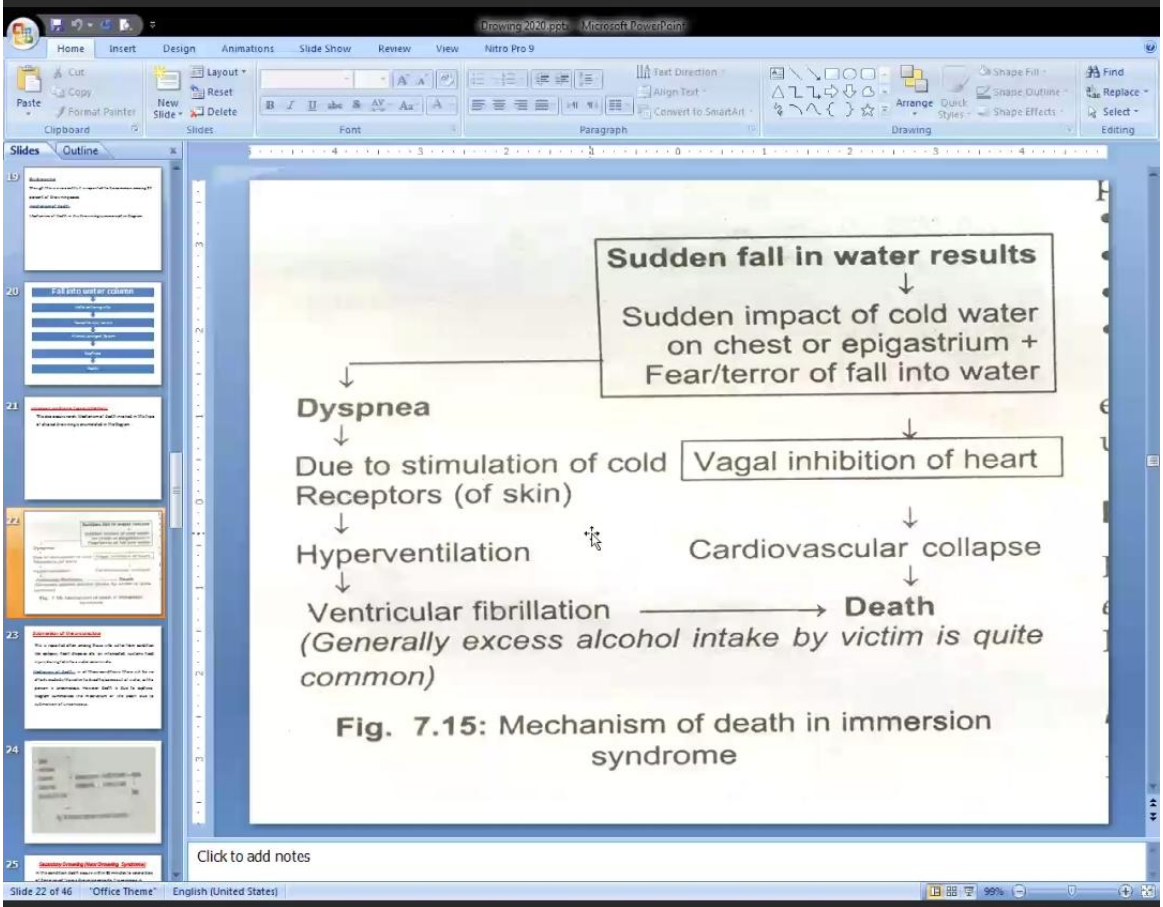

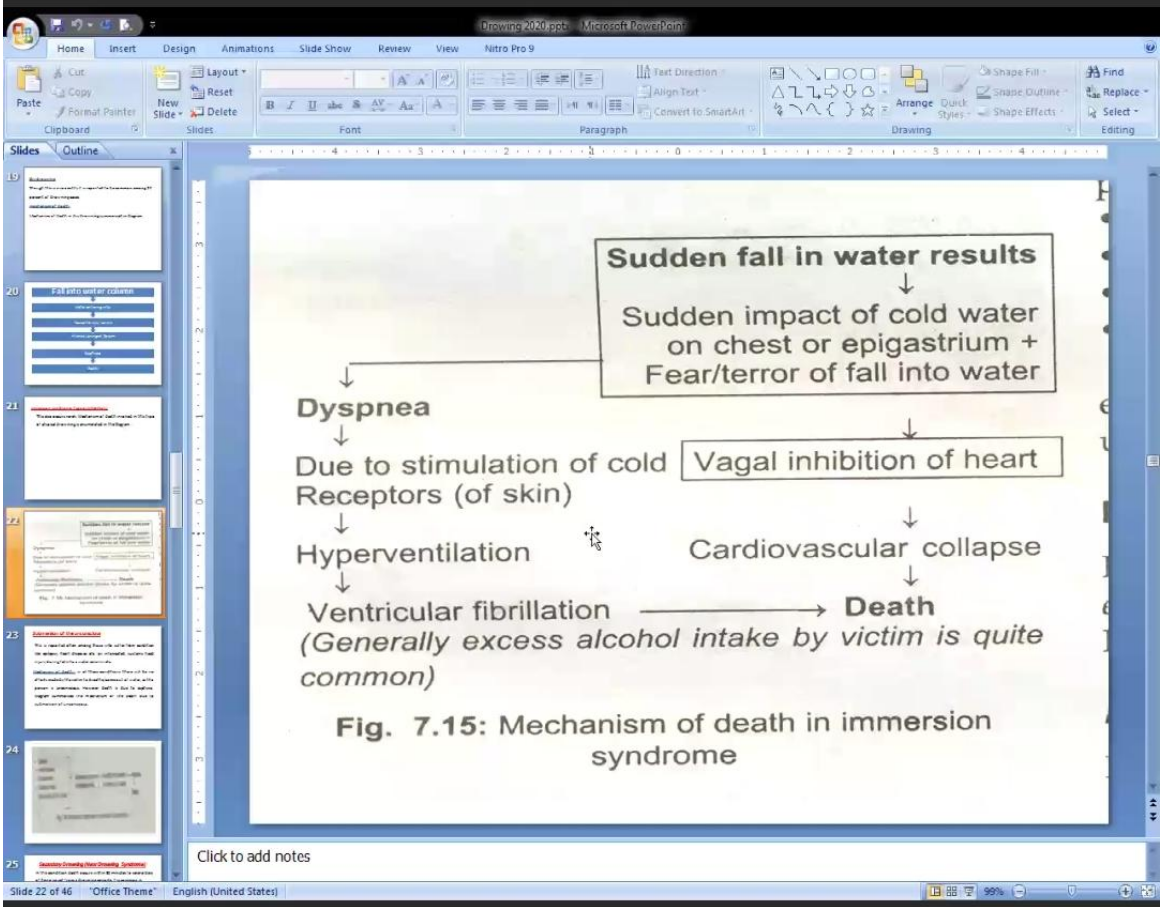

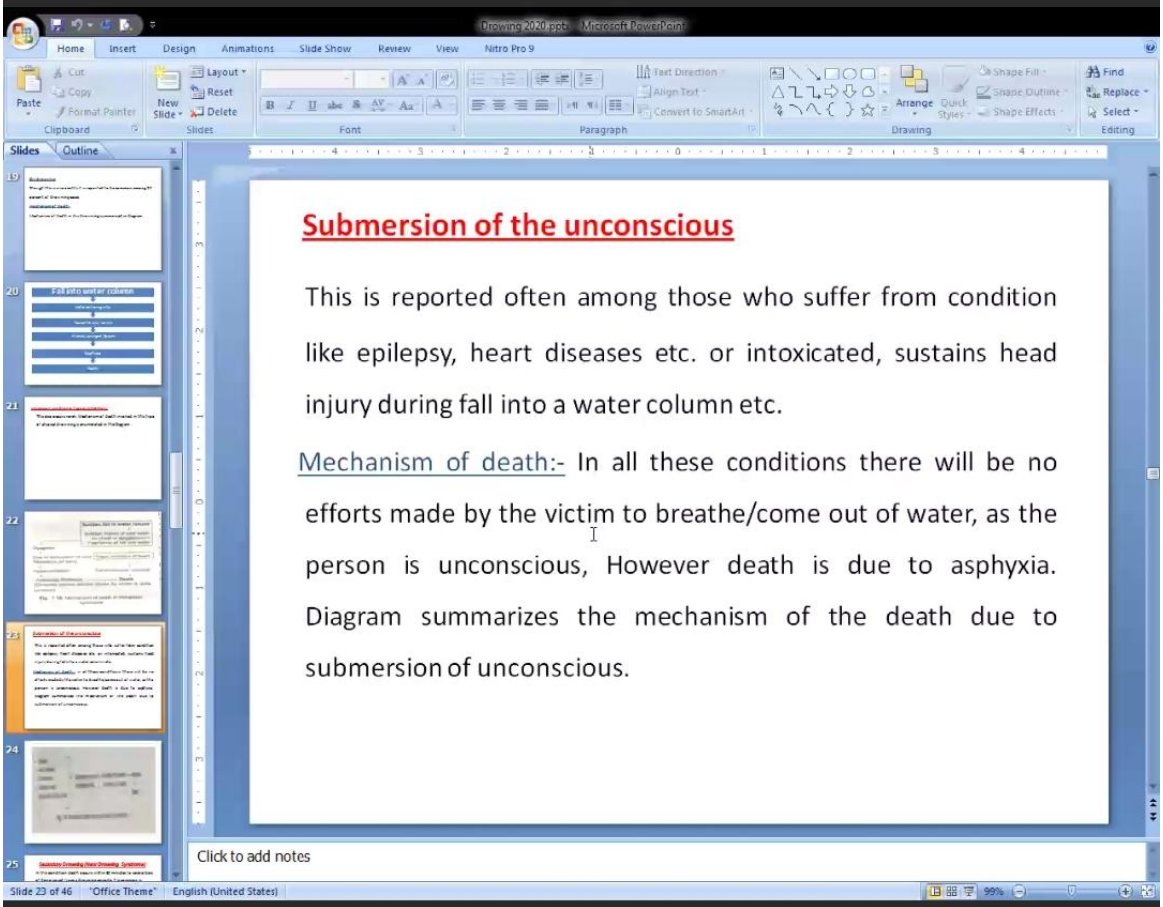

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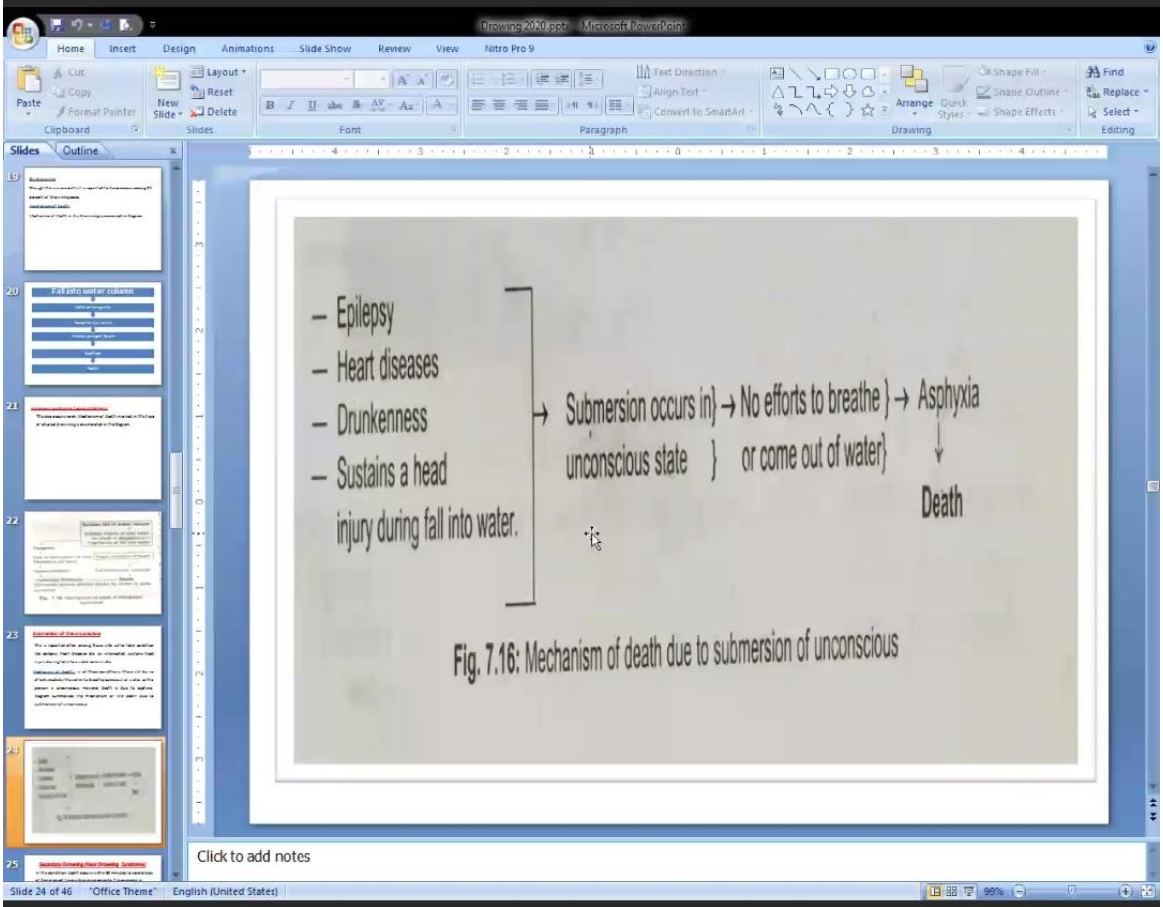

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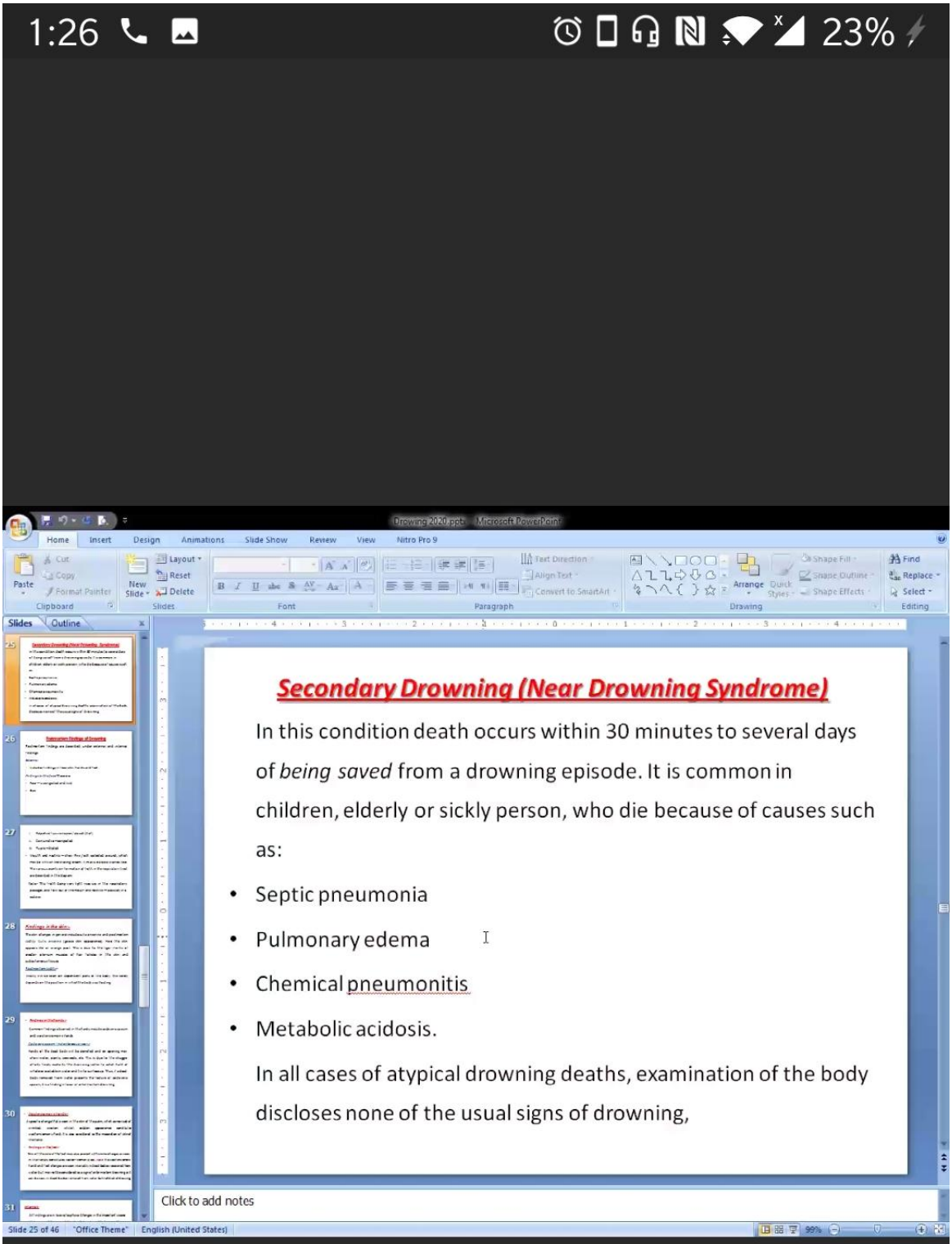

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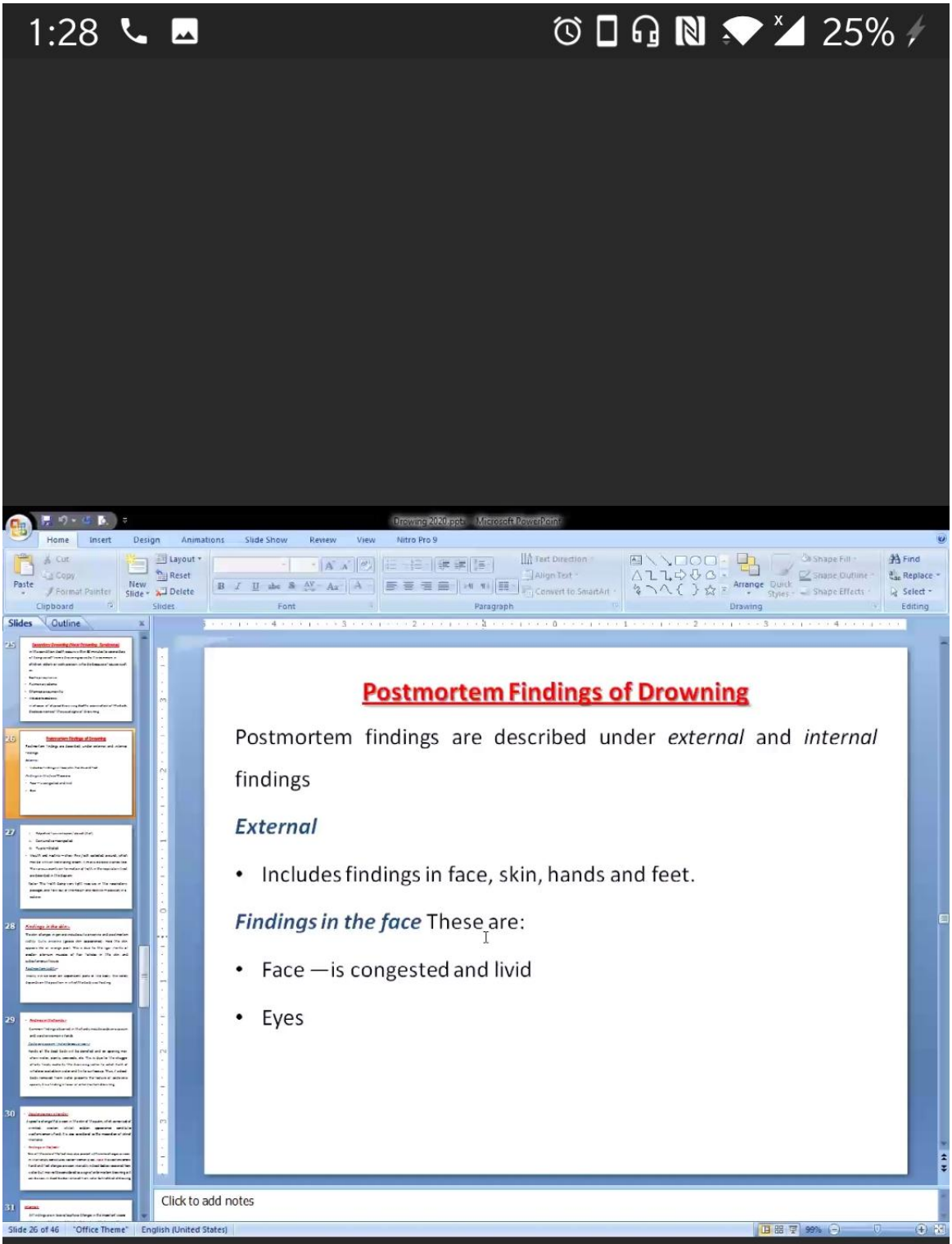
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Outline
Postmortem Findings of Drowning
Postmortem findings are described under external and internal findings
External
• Includes findings in face, skin, hands and feet.
Findings in the face These are:
• Face —is congested and livid
• Eyes
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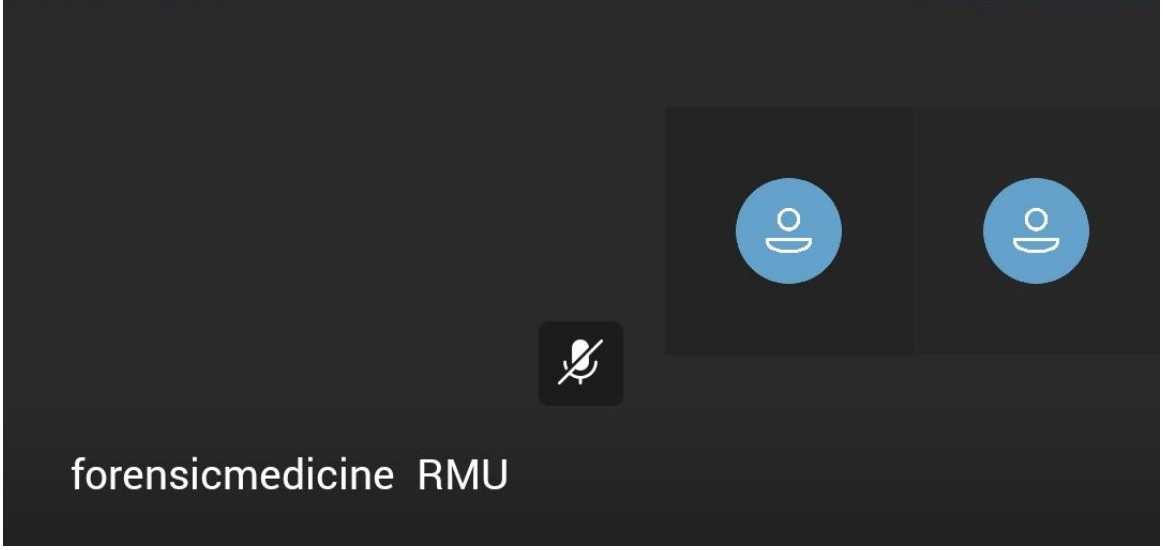
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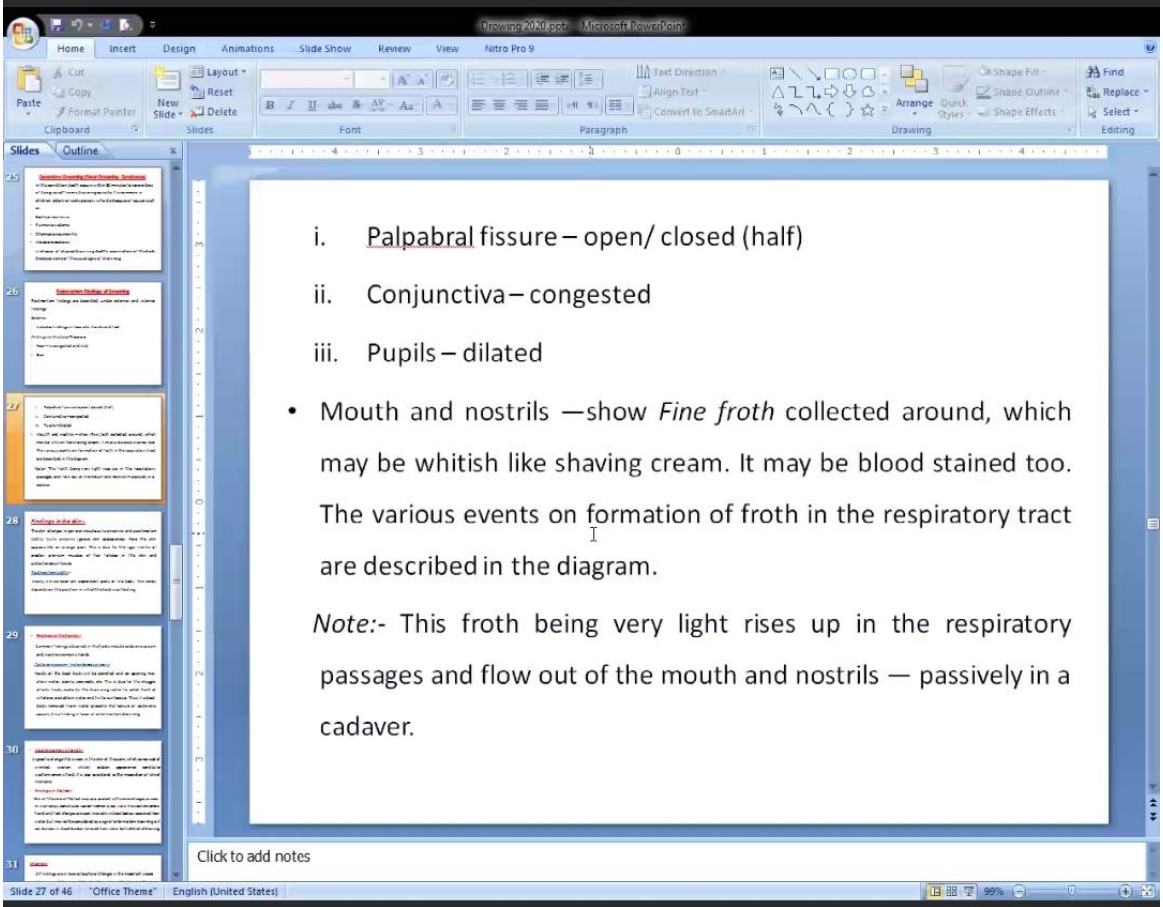

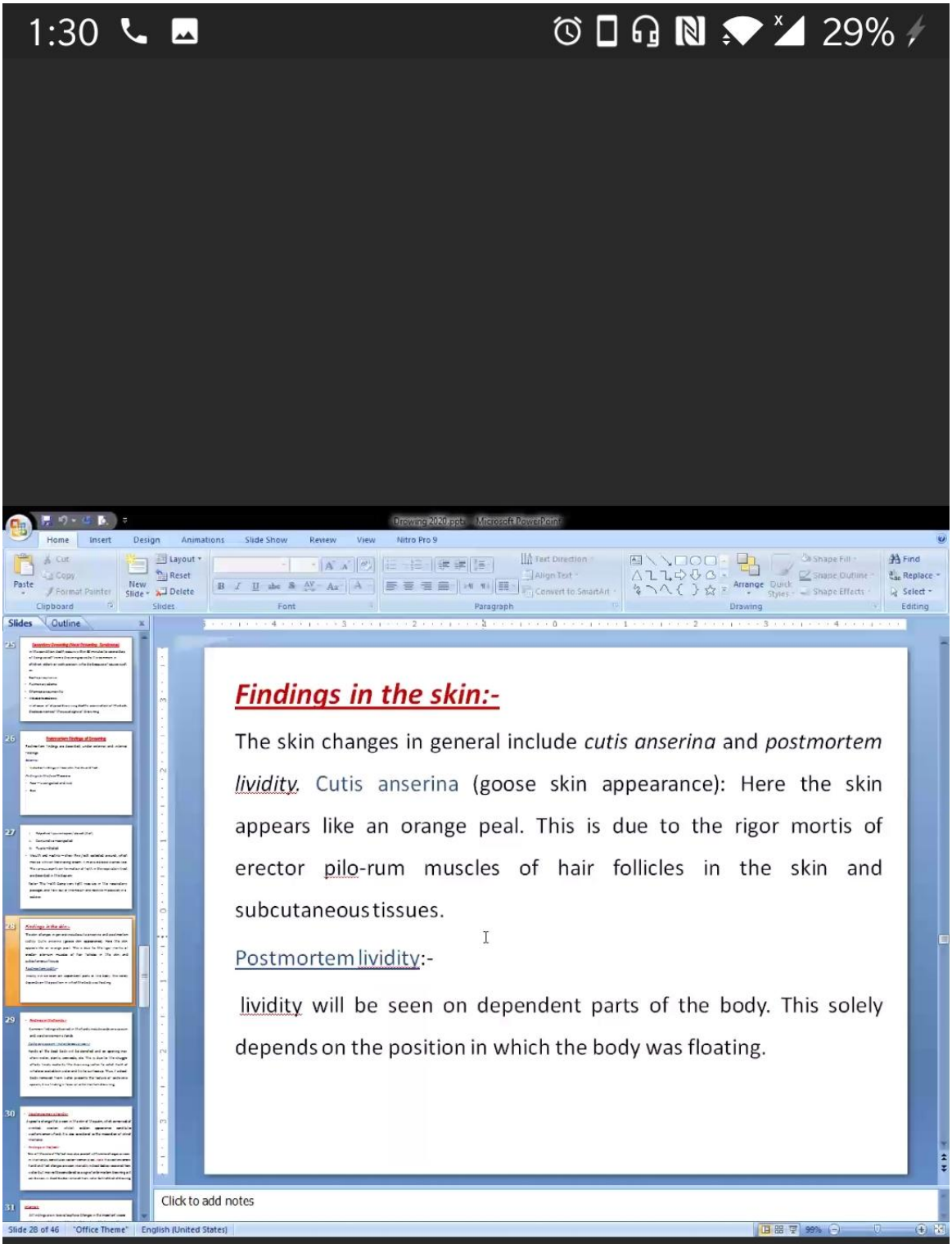
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Findings in the skin:-
The skin changes in general include cutis anserina and postmortem lividity. Cutis anserina (goose skin appearance): Here the skin appears like an orange peal. This is due to the rigor mortis of erector pilo-rum muscles of hair follicles in the skin and subcutaneous tissues.
Postmortem lividity:-
lividity will be seen on dependent parts of the body. This solely depends on the position in which the body was floating.
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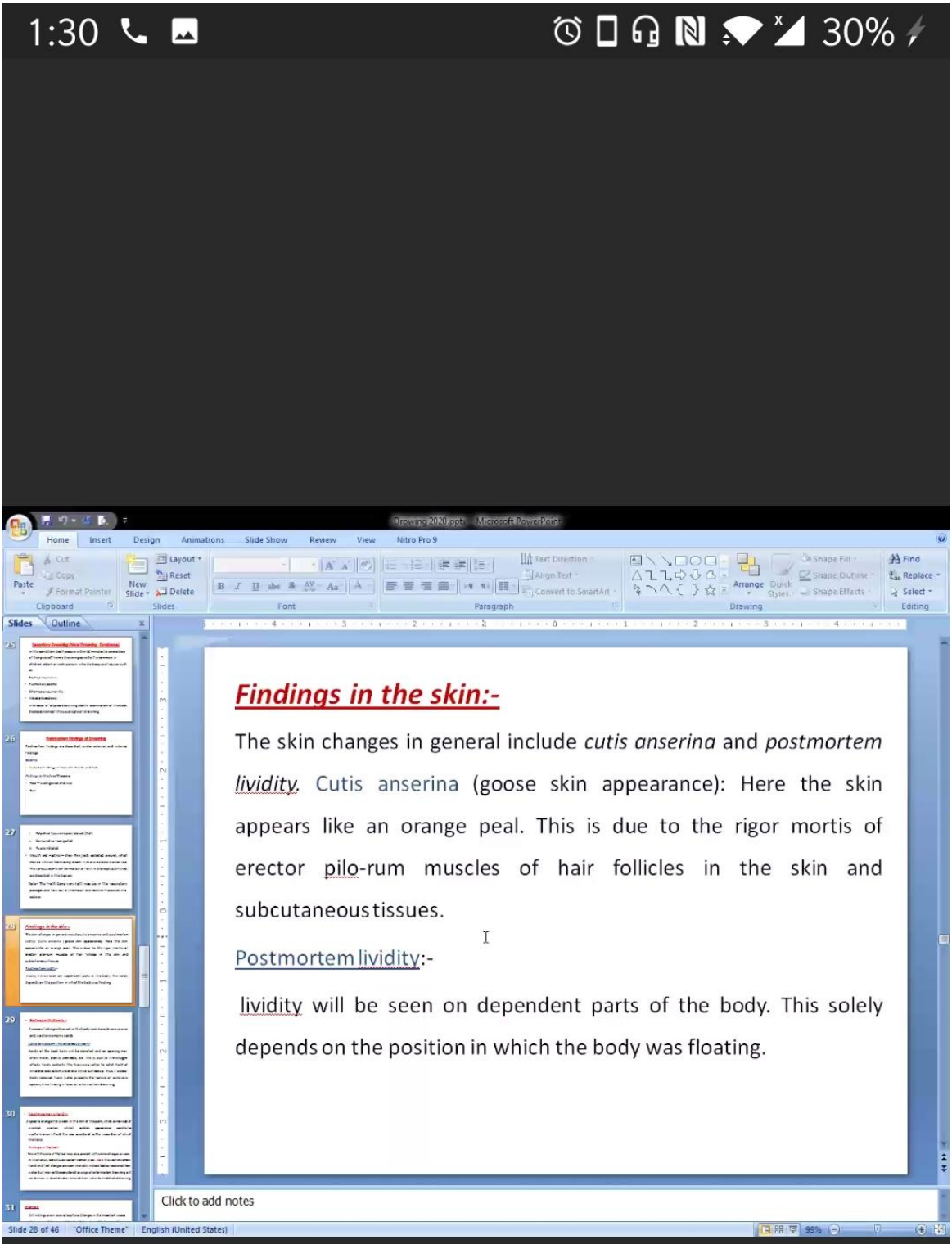
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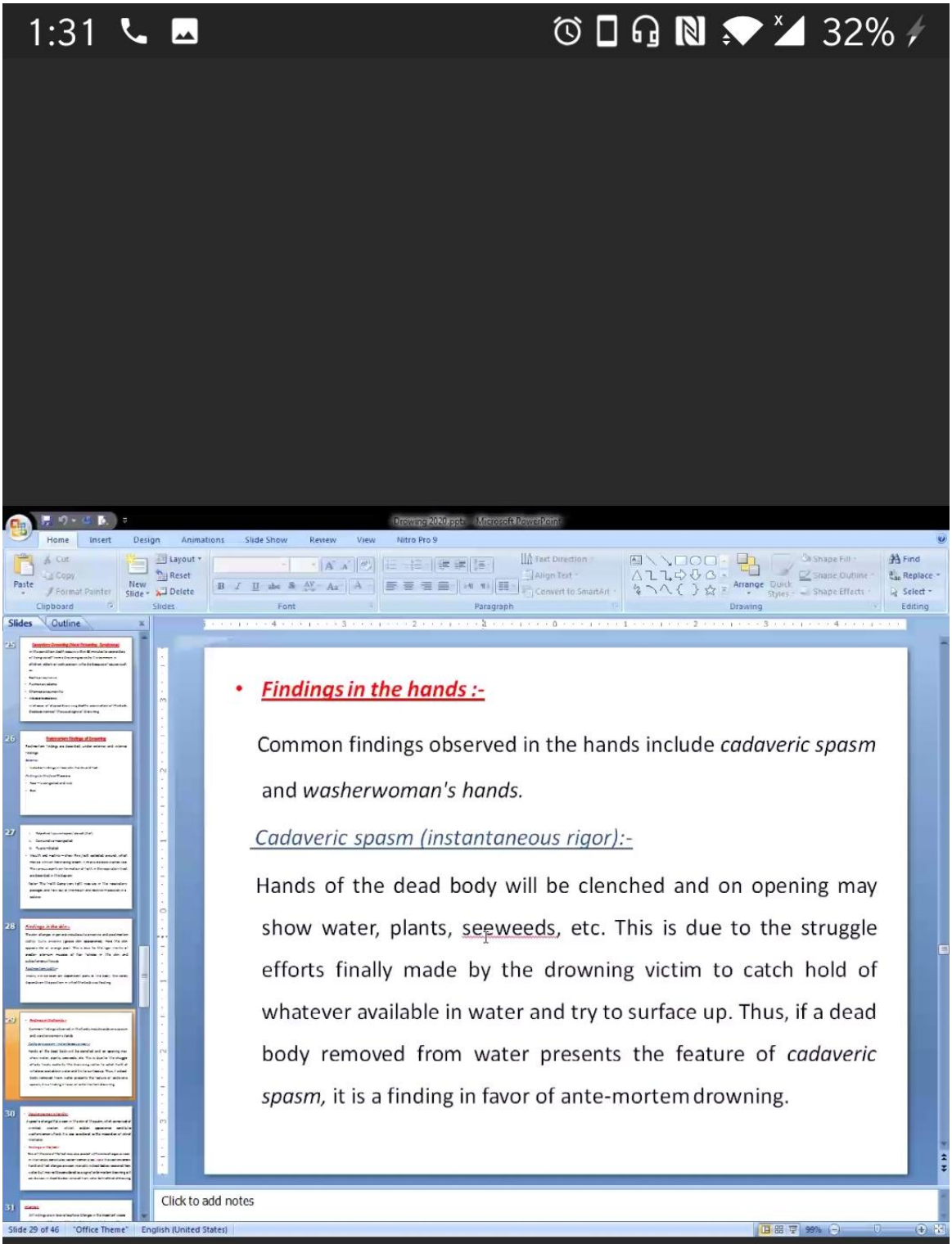

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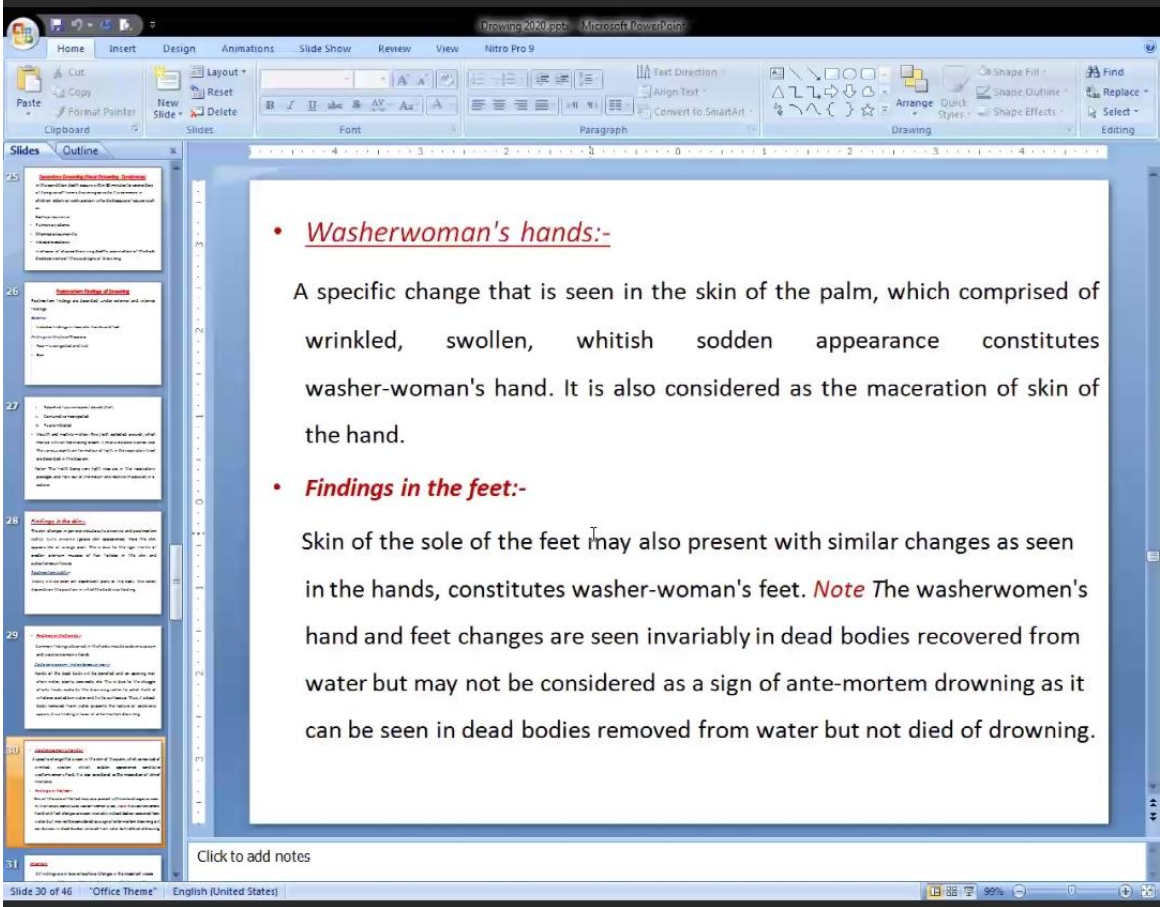

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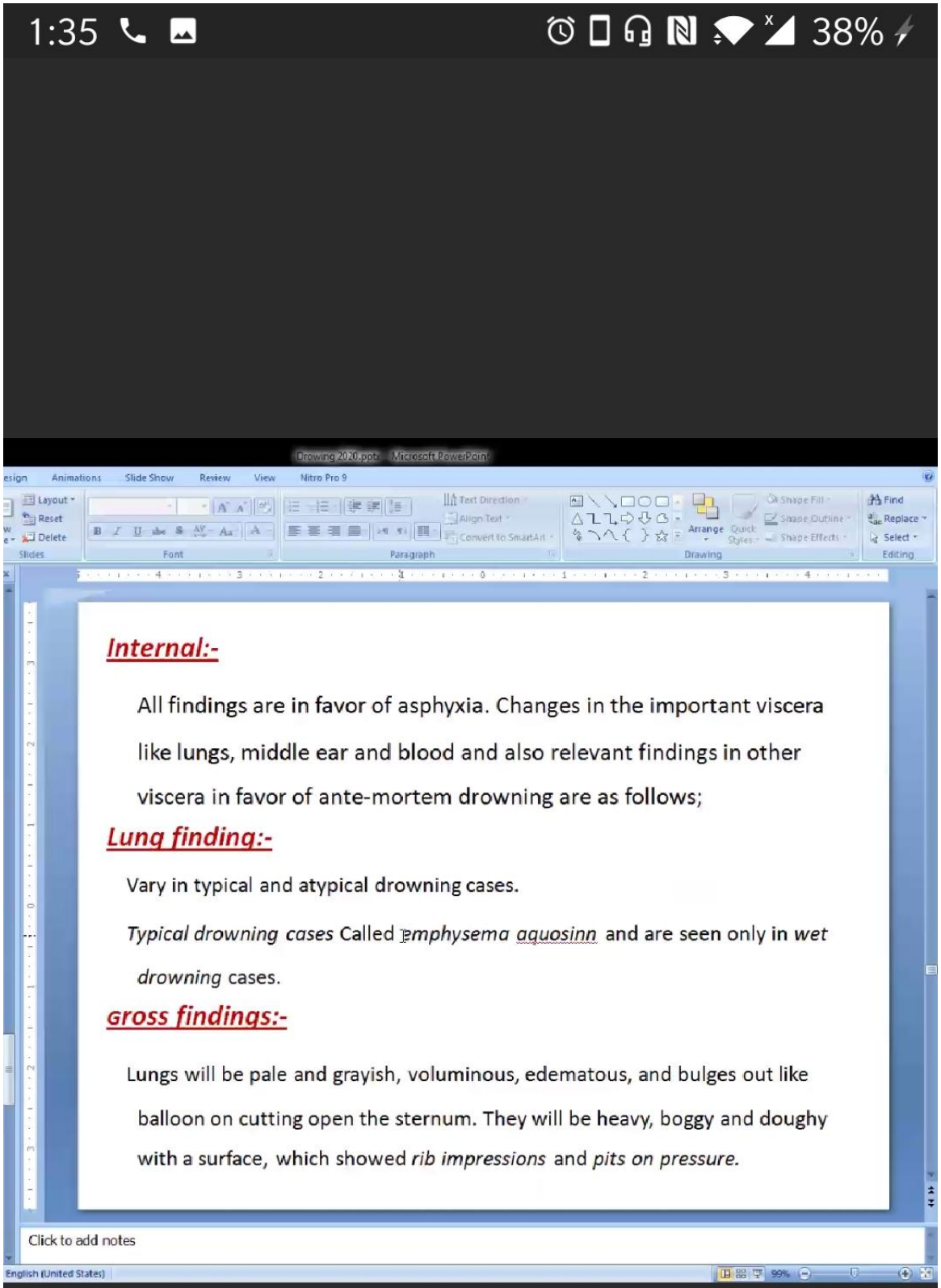
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Internal:-
All findings are in favor of asphyxia. Changes in the important viscera like lungs, middle ear and blood and also relevant findings in other viscera in favor of ante-mortem drowning are as follows;
Lung finding:-
Vary in typical and atypical drowning cases.
Typical drowning cases Called emphysema aquosinn and are seen only in wet drowning cases.
gross findings:-
Lungs will be pale and grayish, voluminous, edematous, and bulges out like balloon on cutting open the sternum. They will be heavy, boggy and doughy with a surface, which showed rib impressions and pits on pressure.
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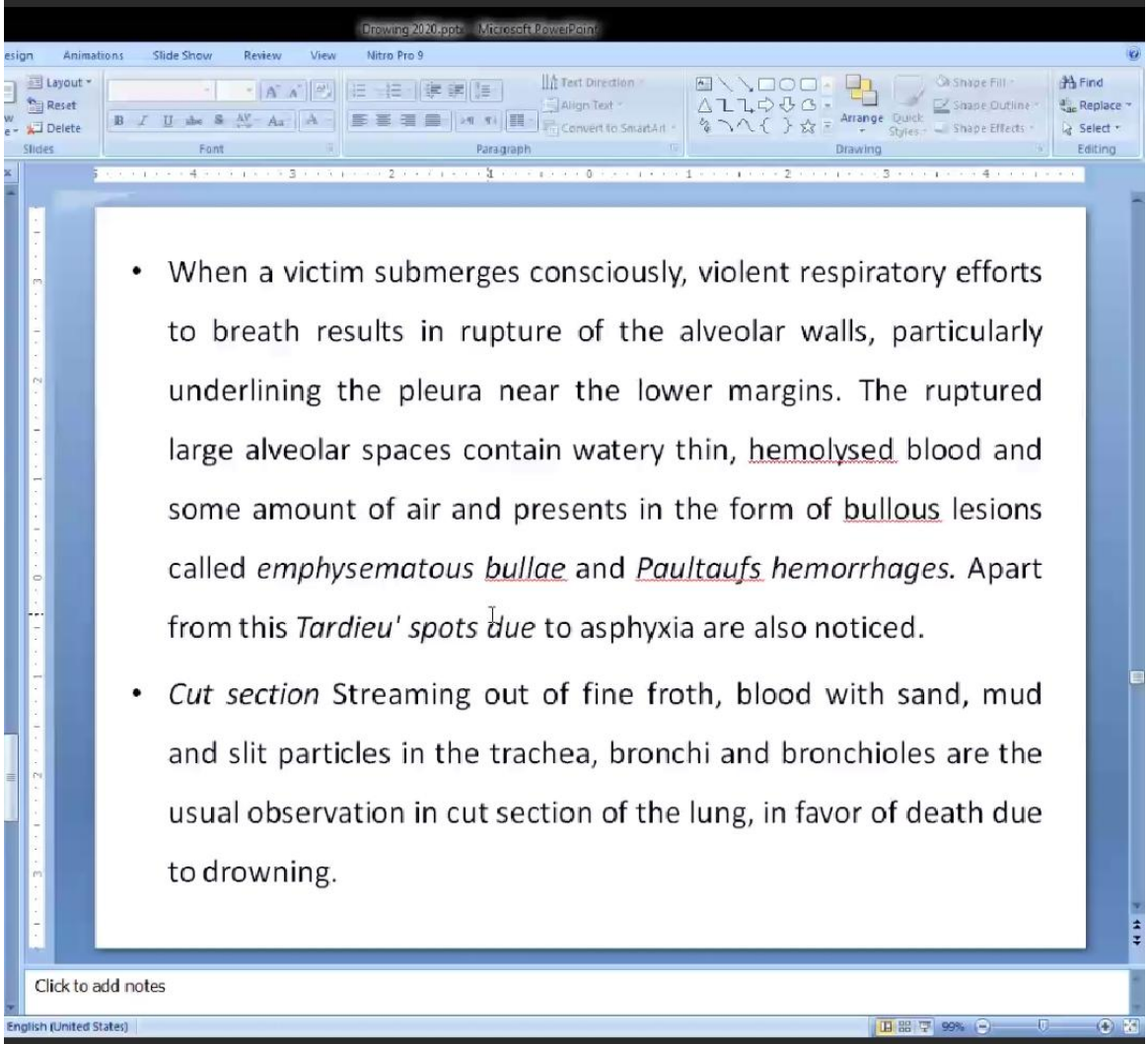
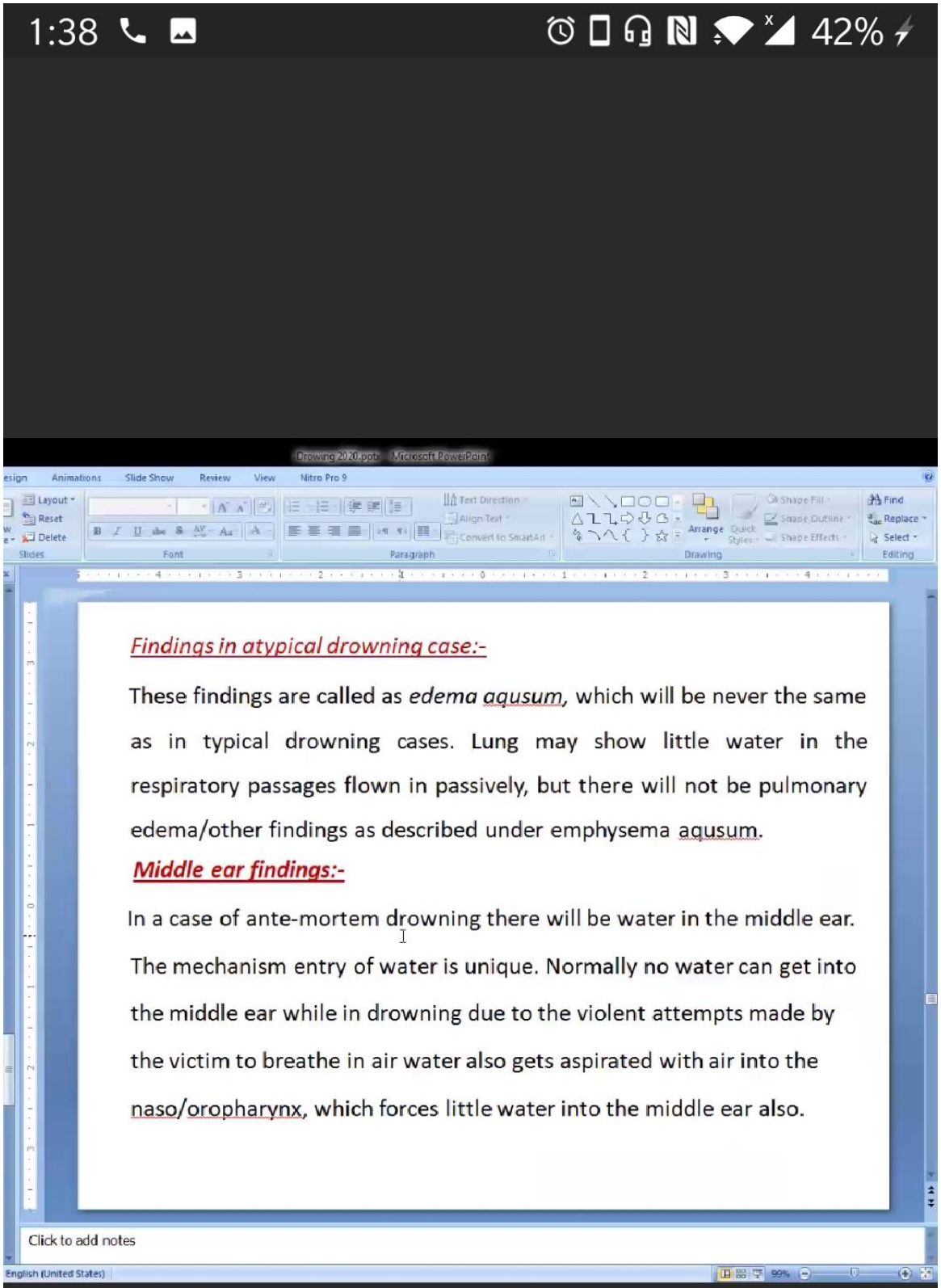


- When a victim submerges consciously, violent respiratory efforts to breath results in rupture of the alveolar walls, particularly underlining the pleura near the lower margins. The ruptured large alveolar spaces contain watery thin, hemolysed blood and some amount of air and presents in the form of bullous lesions called *emphysematous bullae* and *Paultaufs hemorrhages.* Apart from this *Tardieu' spots due* to asphyxia are also noticed.
- *Cut section* Streaming out of fine froth, blood with sand, mud and slit particles in the trachea, bronchi and bronchioles are the usual observation in cut section of the lung, in favor of death due to drowning.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Findings in atypical drowning case:-
These findings are called as edema aqusum, which will be never the same as in typical drowning cases. Lung may show little water in the respiratory passages flown in passively, but there will not be pulmonary edema/other findings as described under emphysema aqusum.
Middle ear findings:-
In a case of ante-mortem drowning there will be water in the middle ear. The mechanism entry of water is unique. Normally no water can get into the middle ear while in drowning due to the violent attempts made by the victim to breathe in air water also gets aspirated with air into the naso/oropharynx, which forces little water into the middle ear also.
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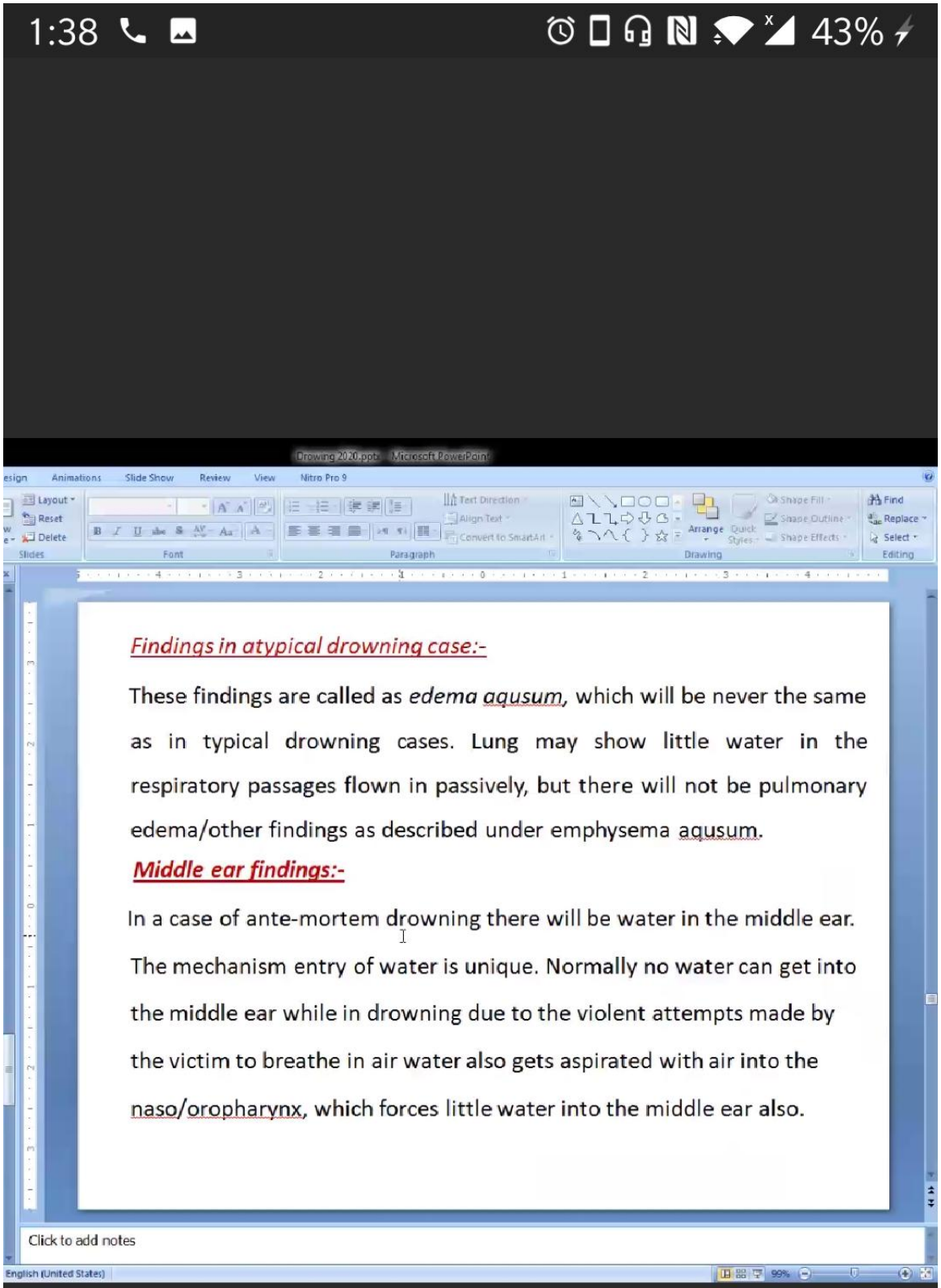
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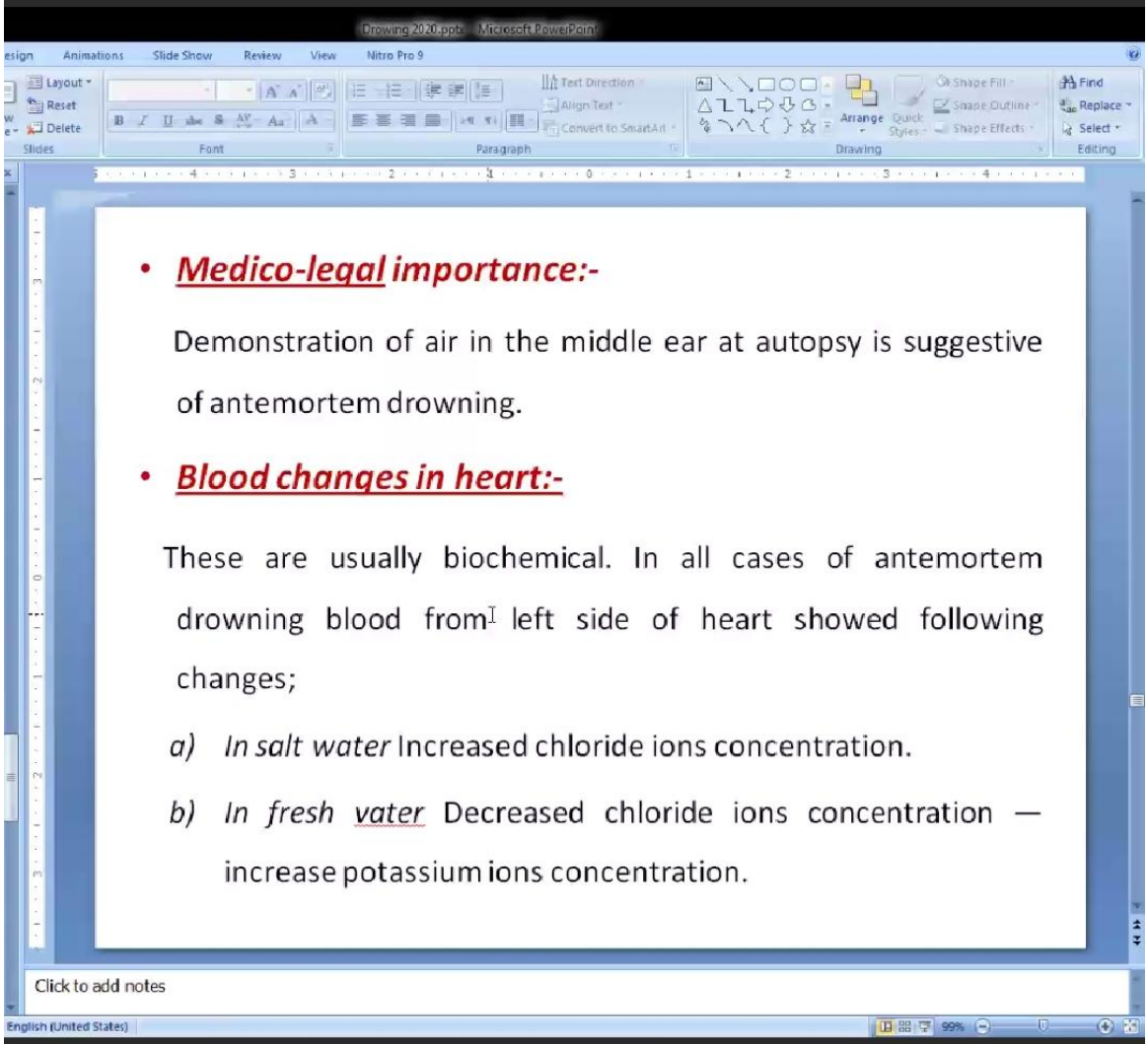

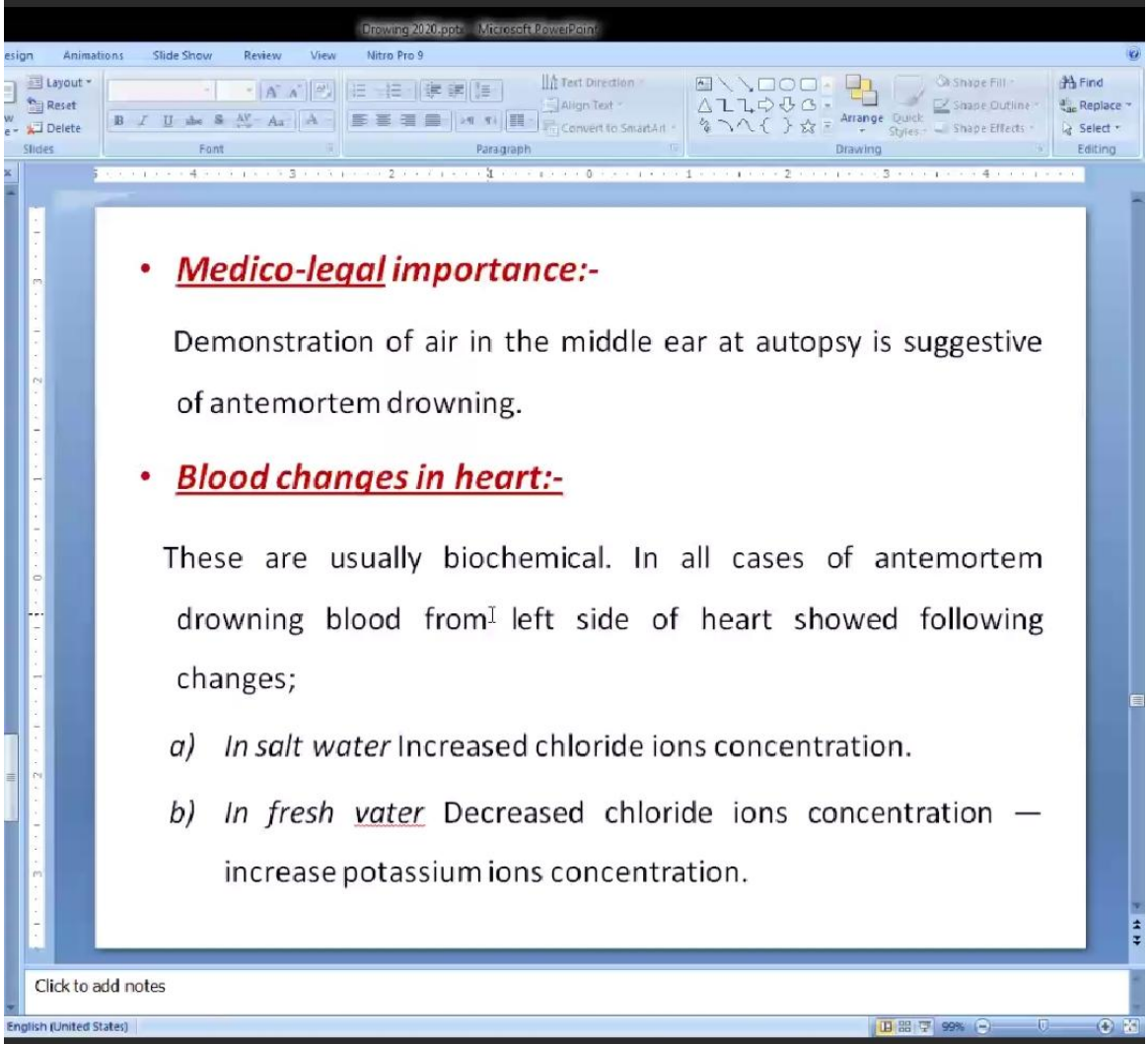

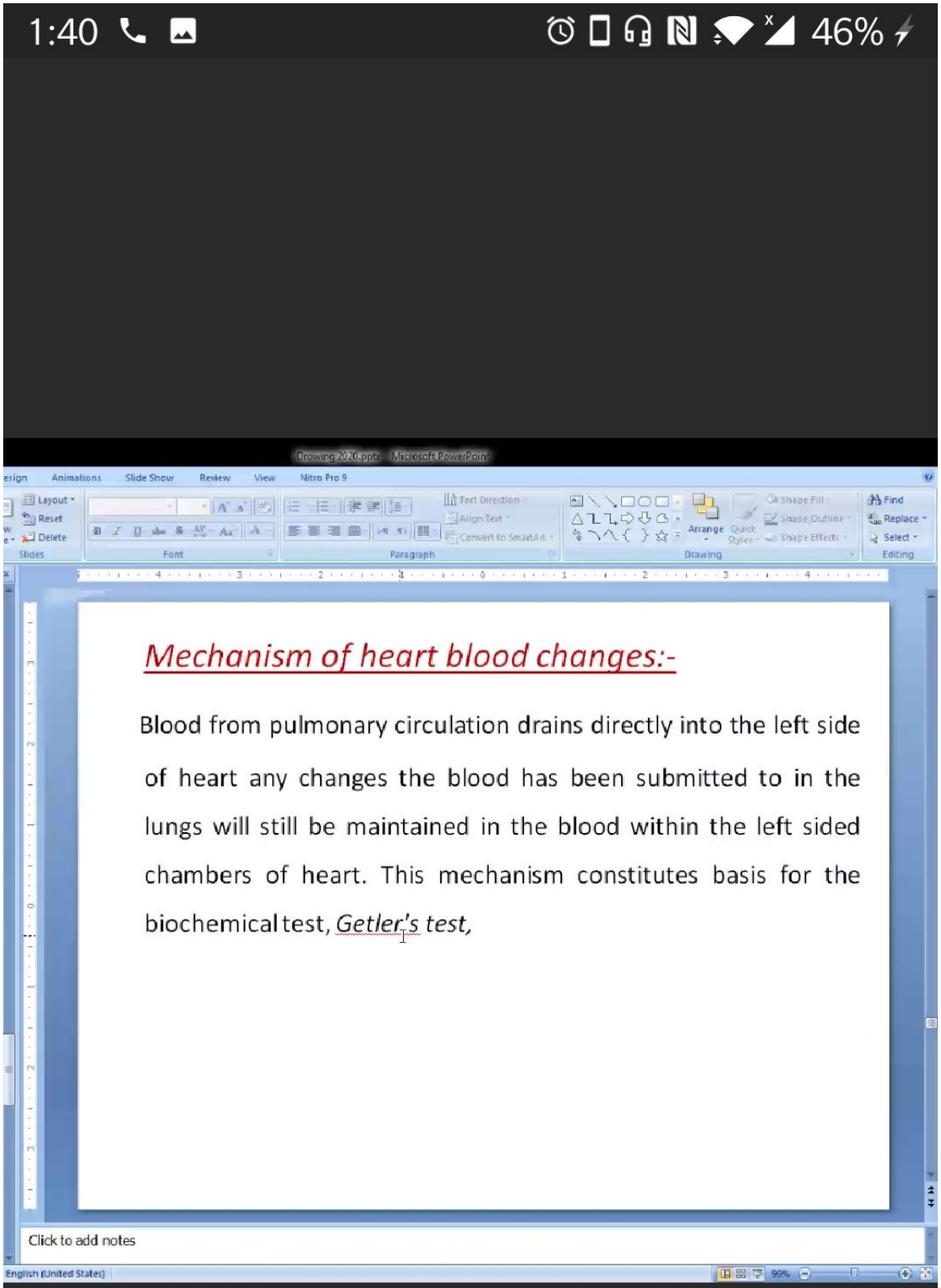

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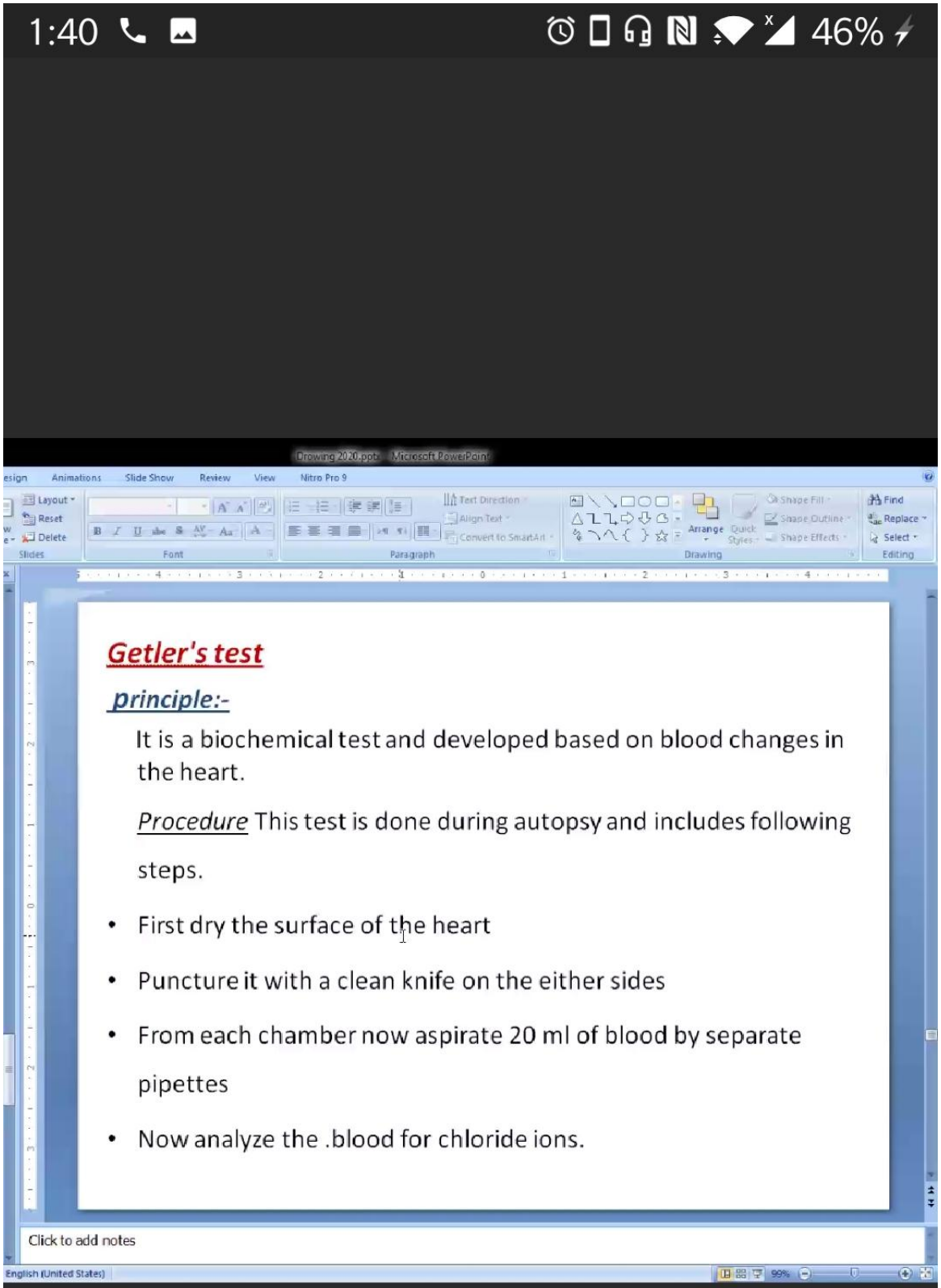
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Getler's test
principle:-
It is a biochemical test and developed based on blood changes in the heart.
Procedure This test is done during autopsy and includes following steps.
First dry the surface of the heart
Puncture it with a clean knife on the either sides
From each chamber now aspirate 20 ml of blood by separate pipettes
Now analyze the .blood for chloride ions.
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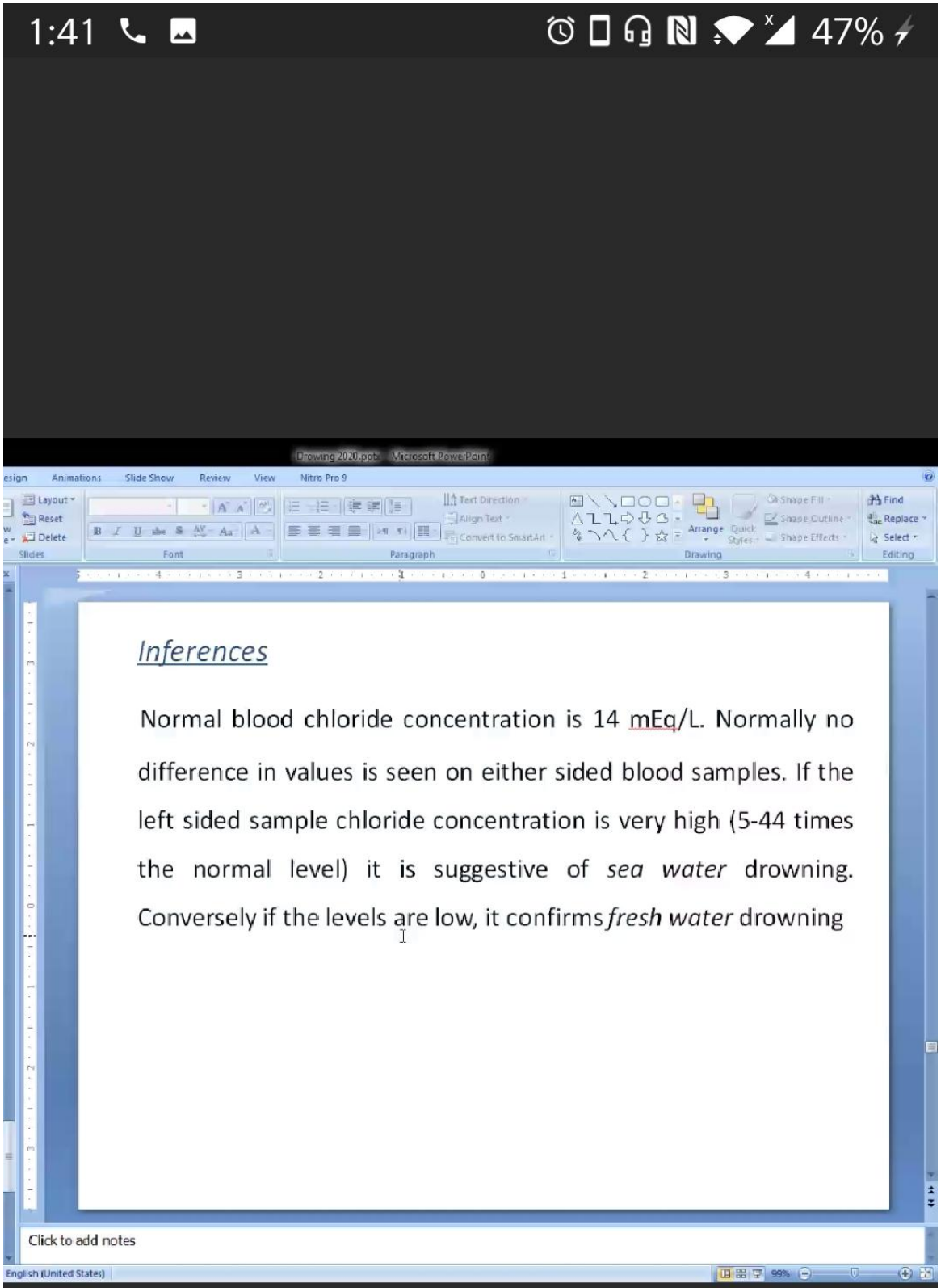
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Inferences
Normal blood chloride concentration is 14 mEq/L. Normally no difference in values is seen on either sided blood samples. If the left sided sample chloride concentration is very high (5-44 times the normal level) it is suggestive of sea water drowning. Conversely if the levels are low, it confirms fresh water drowning
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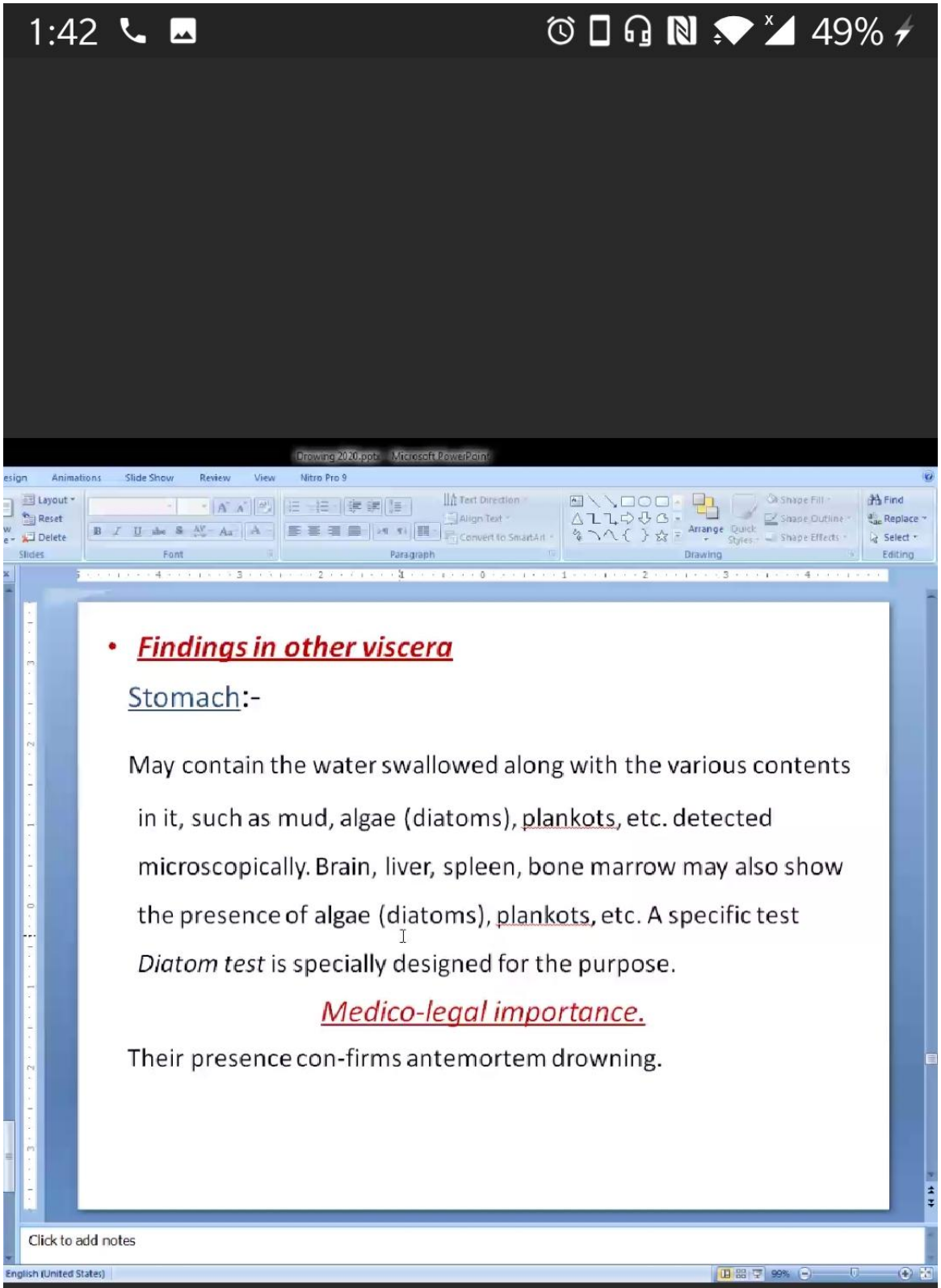
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Findings in other viscera
Stomach:-
May contain the water swallowed along with the various contents in it, such as mud, algae (diatoms), plankots, etc. detected microscopically. Brain, liver, spleen, bone marrow may also show the presence of algae (diatoms), plankots, etc. A specific test Diatom test is specially designed for the purpose.
Medico-legal importance.
Their presence con-firms antemortem drowning.
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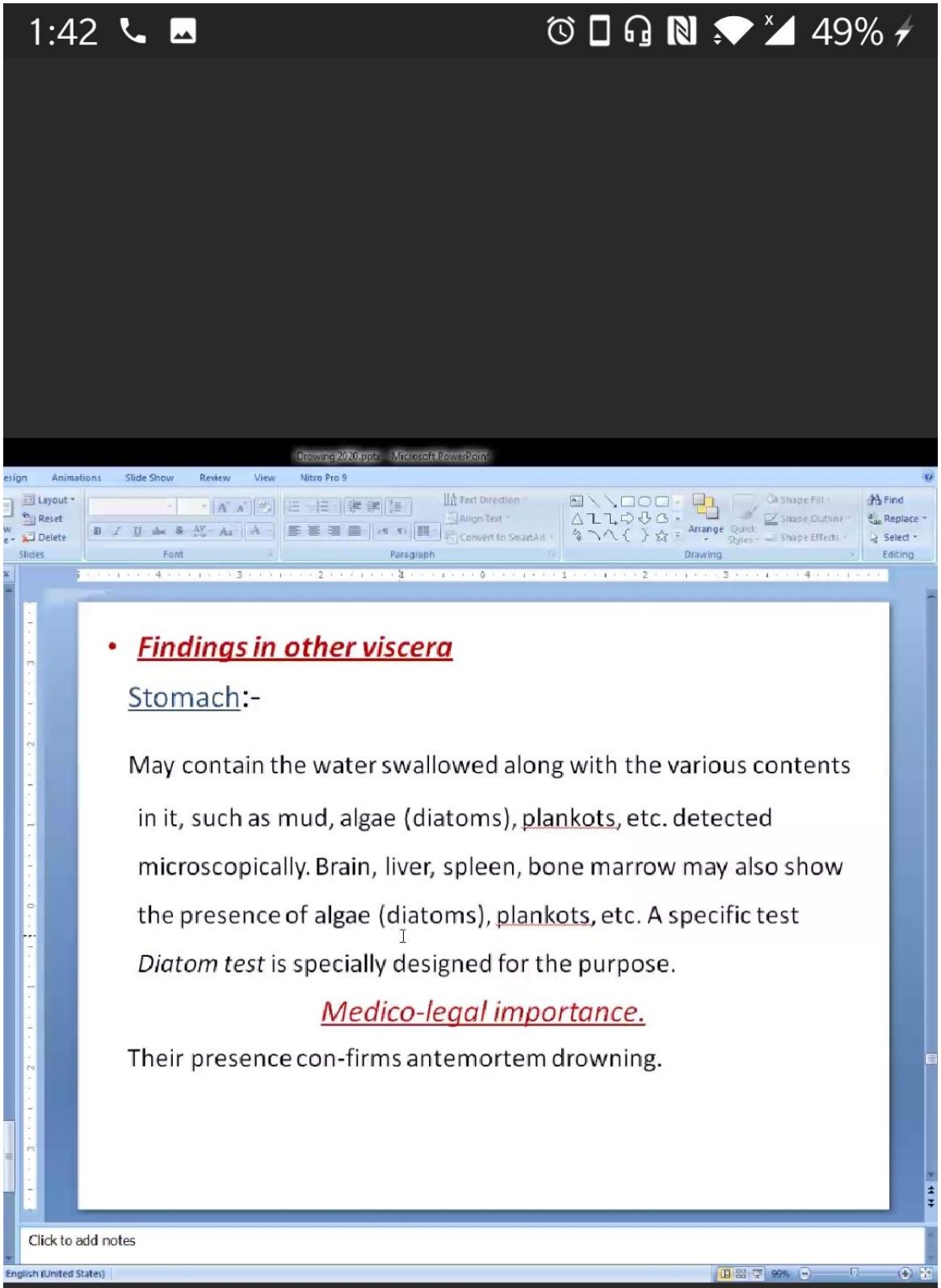
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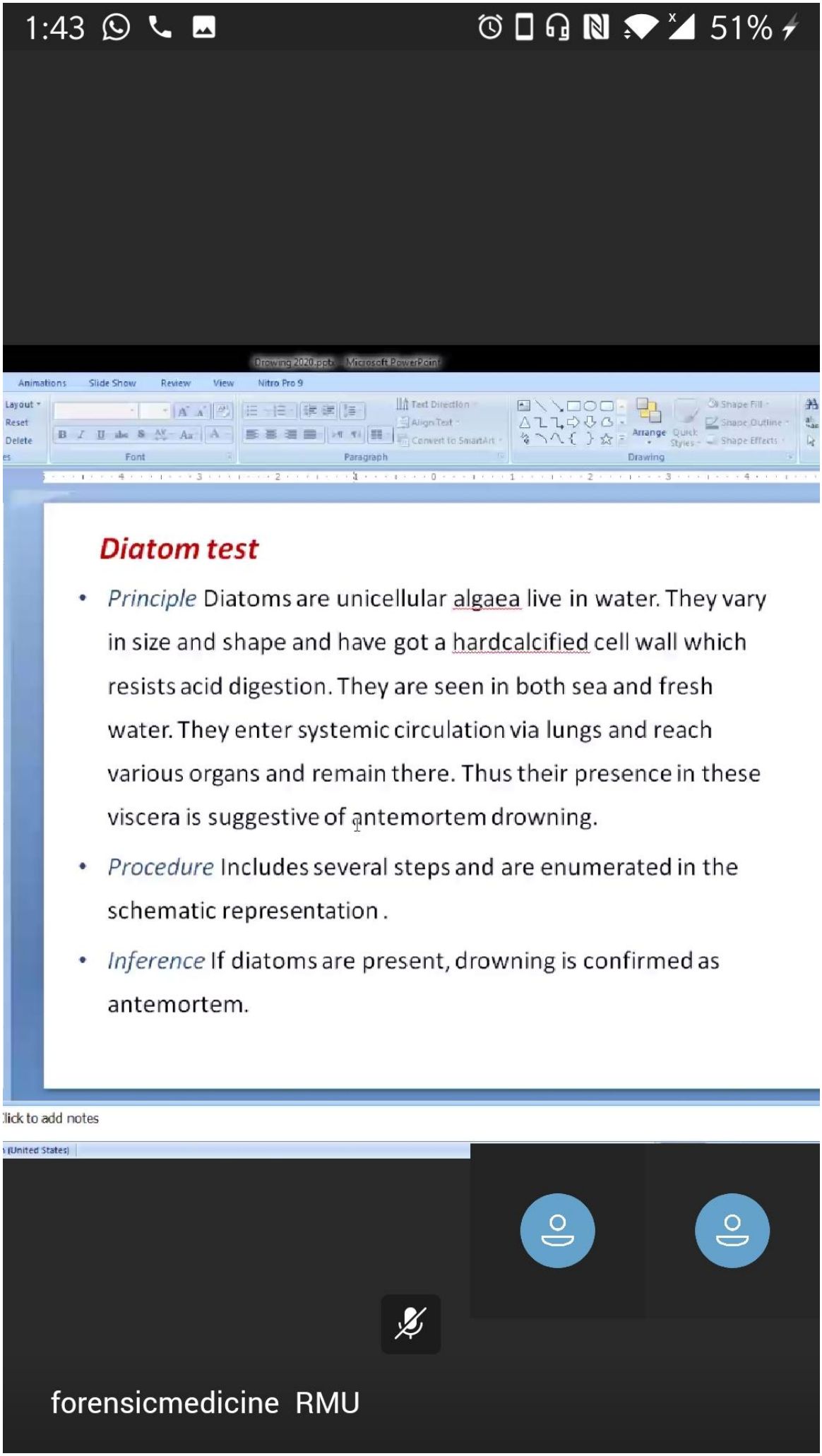
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Diatom test
Principle Diatoms are unicellular algaea live in water. They vary in size and shape and have got a hardcalcified cell wall which resists acid digestion. They are seen in both sea and fresh water. They enter systemic circulation via lungs and reach various organs and remain there. Thus their presence in these viscera is suggestive of antemortem drowning.
Procedure Includes several steps and are enumerated in the schematic representation .
Inference If diatoms are present, drowning is confirmed as antemortem.
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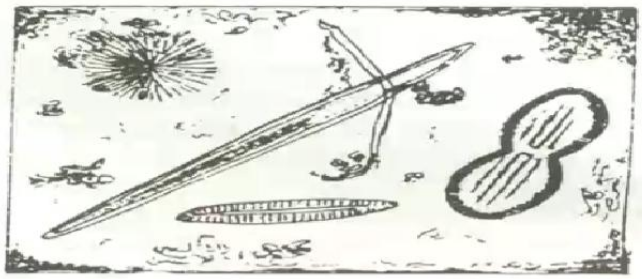
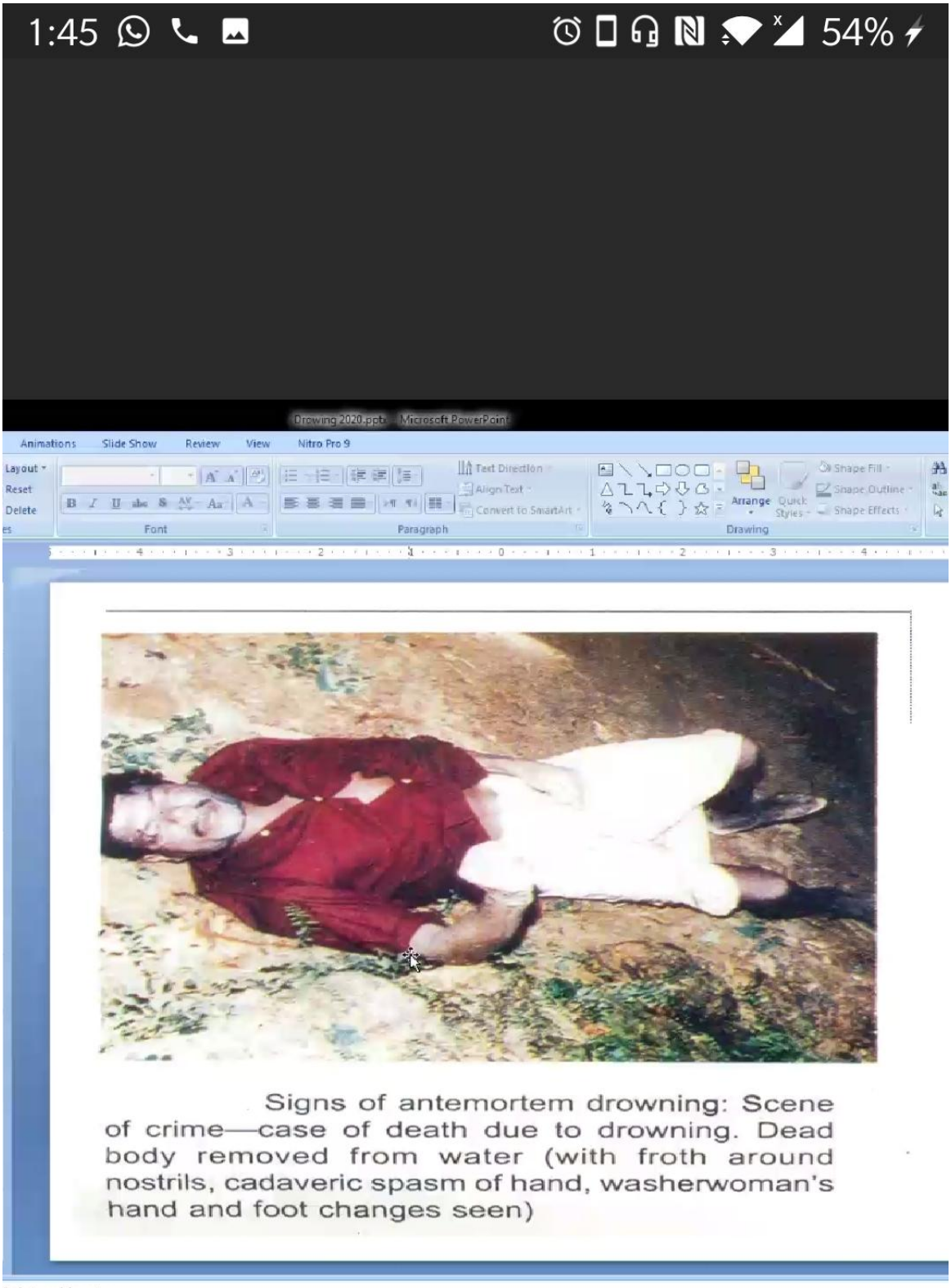


Diatoms

Take 2-5 gm of tissue suspected of diatoms
or
40 gm of currettings of bone marrow
+
Add concentrated nitric acid, which digests all other tissues, except diatoms
↓
Boil for 10 to 15 minutes
↓
Collect only the supernatant fatty, yellowish colored fluid
↓
Centrifuge
↓
Examine the deposits microscopically for diatoms when the preparation is wet under cover glass

Procedure of diatom test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Shape Outline
Shape Effects
Signs of antemortem drowning: Scene of crime—case of death due to drowning. Dead body removed from water (with froth around nostrils, cadaveric spasm of hand, washerwoman's hand and foot changes seen)
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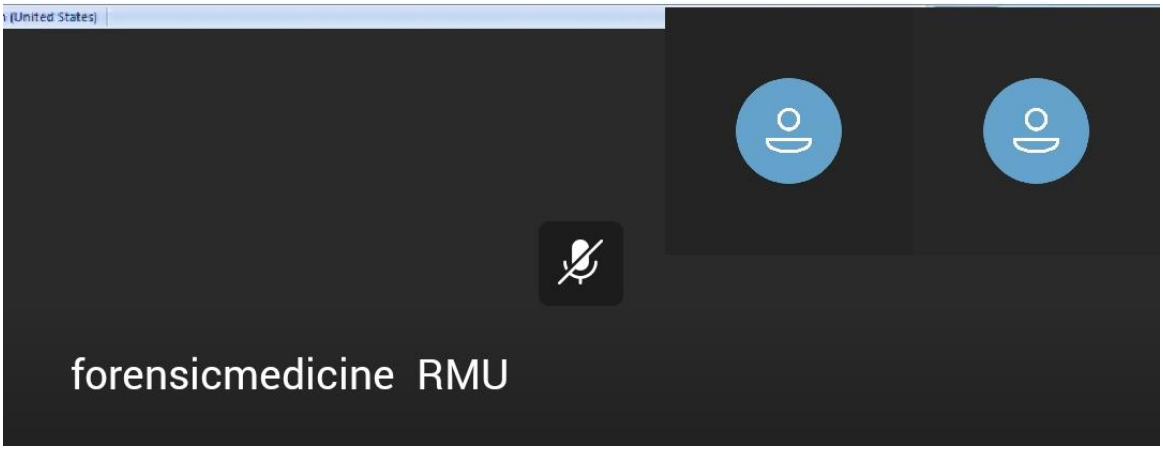
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Signs of antemortem drowning:
Froth around nostrils

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. Signs of antemortem drowning:
Cadaveric spasm

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Drowing 2020.ppt - Microsoft PowerPoint

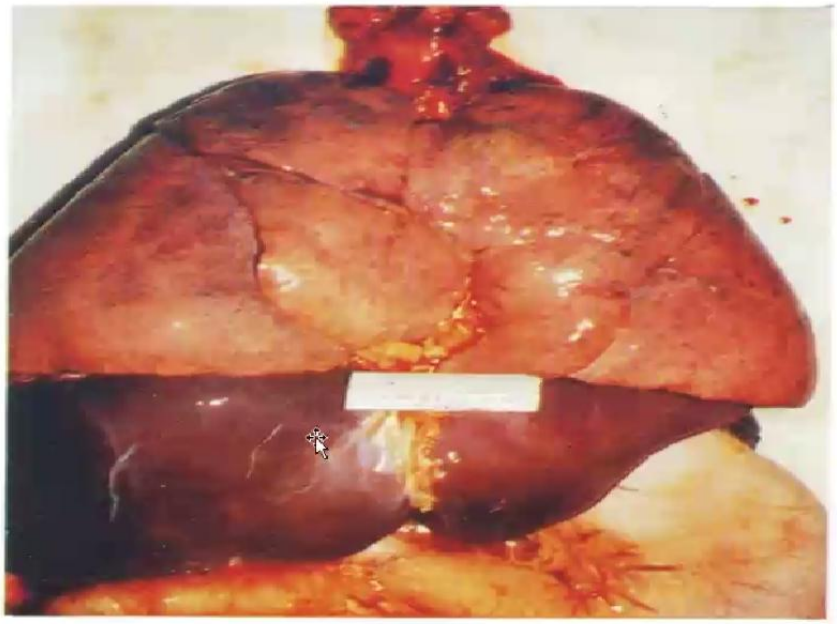
Animations Slide Show Review View Nitro Pro 9

Layout Reset Delete

Font Paragraph Drawing

Text Direction Align Text Convert to SmartArt

Arrange Quick Styles Shape Fill Shape Outline Shape Effects



Signs of antemortem drowning:
Voluminous, edematous lungs as seen on en masse
emoval of viscera in same case a

lick to add notes

(United States)

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