

ORAL ABSTRACTS

TISSUE PRESERVATION WITH ELNADY TECHNIQUE:
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This paper was presented at the
10th International Congress on
Advances in Veterinary and Technics
(ICAVST 2025) in Sarajevo,
Bosnia and Herzegovina.

How to cite: Vejzović A, Avdić R,
Tandir F, Dučić N, Hadžimerović N.
2025. Tissue preservation with Elnady
technique: Important remarks.
Veterinaria, 74Suppl(1), 81-2.

ABSTRACT

Formalin, as a proven carcinogenic and toxic chemical, is aiming to be reduced or completely removed from use in all spheres. Among different alternatives for formalin use, the plastination technique is widely known as unique method in tissue preservation. Due to its expensiveness, more affordable method has been invented by Professor Fawzy Elnady. The Elnady technique aims to detoxify formalin specimens used in classes by using cheaper and available chemicals. The specimens obtained are non-toxic, durable, odorless, dry, soft and flexible. They can be used in the teaching of anatomy, but also in other subjects such as embryology, pathology, parasitology, clinics and forensic veterinary medicine. During preparation, formalin is used for tissue fixation, acetone for dehydration, glycerin for impregnation and corn starch for drying of specimens. In this study, we observed effectiveness of the method on more than 100 different specimens. The results showed that lower quality specimens are obtained when the organs are stored in formalin for longer time. Usually, these specimens became darker with the decrease of visibility of structures. Furthermore, we noticed that lungs become darker with tissue sensitive to damages. The liver preparation resulted in dark, non-flexible specimen. We suggest these changes could be due to the time specimens were in glycerin since before this phase specimens had adequate characteristics. Throughout the specimens we also noticed the bad impact organ membranes had if left on the organ. With the acetone, they became too dry and their remains decreased the quality of the specimens. In our study, we confirmed the results of the author but we suggest that this method is not adequate for every type of organ and that organ membranes should be removed prior to process. We emphasize the importance of fresh specimens use, since older formalin specimens after preparation were not of great quality.

Keywords: Alternatives, anatomy, Elnady, plastination

PREZERVACIJA TKIVA ELNADY TEHNIKOM: VAŽNE NAPOMENE

SAŽETAK

Formalin, kao dokazano kancerogena i toksična hemikalija, sve se više nastoji smanjiti ili potpuno ukloniti iz upotrebe u svim područjima. Među različitim alternativama za upotrebu formalina, tehnika plastinacije poznata je kao jedinstvena metoda očuvanja tkiva. Zbog svoje visoke cijene, razvijena je pristupačnija metoda koju je izumio profesor Fawzy Elnady. Elnadyjeva tehnika ima za cilj detoksikaciju formalinskih preparata korištenih u nastavi, upotrebom jeftinijih i dostupnih hemikalija. Dobiveni preparati su netoksični, izdržljivi, bez mirisa, suhi, mekani i fleksibilni. Mogu se koristiti u nastavi anatomije, ali i u drugim predmetima poput embriologije, patologije, parazitologije, klinike i forenzičke veterinarske medicine. Tokom pripreme koristi se formalin za fiksaciju tkiva, aceton za dehidraciju, glicerol za impregnaciju te kukuruzni škrob za sušenje preparata. U ovom istraživanju promatrali smo efikasnost metode na više od 100 različitih preparata. Rezultati su pokazali da se dobivaju preparati lošije kvalitete kada su organi duže vrijeme skladišteni u formalinu. Takvi preparati obično su tamniji, s manjom vidljivošću struktura. Također smo primijetili da pluća postaju tamnija i osjetljiva na oštećenja. Priprema jetre rezultirala je tamnim, nefleksibilnim preparatom. Smatramo da su te promjene povezane s trajanjem boravka preparata u glicerinu, budući da su prije te faze pokazivali zadovoljavajuće osobine. Kod preparata također smo uočili negativan utjecaj membrana organa ako bi ostale na organima. U kontaktu s acetonom postajale bi presuhe, a njihovi ostaci smanjivali su kvalitetu preparata. U našem istraživanju potvrdili smo rezultate autora, no smatramo da metoda nije pogodna za sve vrste organa te da se membrane organa trebaju ukloniti prije procesa. Naglašavamo važnost korištenja svježih preparata, jer stariji organi čuvani u formalinu nakon pripreme nisu bili zadovoljavajuće kvalitete.

Ključne riječi: Alternative, anatomija, Elnady, plastinacija