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Testing Of Portable Surgical Table In The Treatment Of Small Animals (SOP-1).

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ABSTRACT

The article presents the results of the tests when used in the daily work of veterinary specialists in the veterinary clinics of the surgical table by Vinogradov effectively used 92% of the time, the level of employment of the veterinarian in the field was 78%, and there are reserves of increase of labour productivity due to the elimination of ad hoc interruptions of 5.4%. When used in a daily work of veterinary specialists in veterinary clinics if you use a portable table SOP-1 is effectively used 94% of the time, the level of employment of the veterinarian in the field was 81%, and there are reserves of increase of labour productivity due to the elimination of ad hoc interruptions by 4.9%.

Keywords: surgical table, small animals, timing

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INTRODUCTION

The surgical table is an integral part of the equipment of any operating veterinary clinic. Currently in veterinary surgery are used surgical tables different producers [2, 7, 15, 16].

Any operating table in the first place should be convenient for the veterinarian performing the operation, and then for the animal, which will be on this procedure [1, 3, 4, 6, 9, 11, 17].

In practice, a veterinarian always passes such a situation that a convenient table for operations is a good guarantee of the work of a veterinary surgeon. And it is the operating table, which will be of high quality, gives all the guarantees that the surgery will be carried out at the highest level [18]. Animals that are the object of daily work of a veterinary specialist largely determine both the system of veterinary measures and the organization of labor activity of the entire veterinary service in our country. All veterinary measures should be carried out depending on both the physiological and the severity of the disease [5, 8, 10, 12, 13]. The organization of work of veterinary specialists should be planned taking into account the methods of performing veterinary tasks and their multiplicity [14].

The purpose of testing is to assess the efficiency and effectiveness of the prototype portable operating table for small animals SOP-1 in the conditions of multidisciplinary veterinary clinics providing veterinary services in a hospital and at the doctor's home.

MATERIAL AND METHODS

The study was conducted on the basis of veterinary clinics of Samara and Ulyanovsk regions. Comparative analysis of the main surgical and therapeutic procedures was performed on Vinogradov operating tables and portable operating table (SOP-1) developed on the basis of Vetteh LLC. Veterinary activities were carried out by a group of performers (leading veterinary surgeon and assistant veterinarian), consisting of two people. The study was performed by the method of photography, duration and fotohronometra. To solve the research goal, the working time was divided into working hours and breaks. Time the production order is divided into the time spent on the implementation of the preparatory-final works (VPSR) and the work associated with the operational implementation of production tasks (VOITS) and extra time (DV).

Time of unproductive work included time spent assembling operating tables before the start of each event, transfer of the animal to the operating room and removal after the manipulation, time spent on fixing operable animals, including those with different angles of inclination on portable tables SOP-1. Break time is divided into time, regulated breaks and ad-hoc interruptions. The process of preparatory and final work included: time for putting on and removing overalls before and after each surgical procedure; time for lunch break; hand washing; time for preparation and cleaning of the workplace, as well as preparation and cleaning of the working surface of the surgical table.

Operational work included the main and ancillary works (VOITS). The time of the main work included the performance of specialized surgical interventions at different angles of the tabletop (150 and 250). Time of auxiliary work included preparation of an animal for anesthesia and actually anesthesia, and removal of animals from anesthesia and carrying out inhalation by a physiological solution; parenteral introduction of medicines, including a set in syringes of solutions of medicines (postoperative symptomatic treatment). The time of regulated breaks included the time spent on personal needs and time related to the specifics of the technology of performed surgical procedures. Time of irregular breaks included: time spent on extraneous conversations. To assess the effectiveness of working time, we used the observation sheet of timing of orthopedic works developed by us.

The results of the studies in each group were taken into account strictly according to the established indicators, in each of which symbols were used (table 1).

RESULT

As a result of the timing of working time during the operation to remove the testes in cats (castration), the following results were obtained:



when using the surgical table by Vinogradov:

on VPSR spent – 6.2 minutes, VOITS – 42,3 minutes, DV – 8 minutes, just for carrying out this operation was spent was 56.3 minutes.

when using a portable table SOP-1.

on VPSR spent is 5.7 minutes, WOWPS is 38.3 minutes, DV – 8.3 minute, just for carrying out this operation was spent 52.3 minutes.

The coefficient of use of working hours amounted to at the surgical table by Vinogradov:

$$Cu = (42,3+6,2+0)/56,3 = 0,81;$$

when using a portable table SOP-1:

$$Cu = (38,3+5,7+0)/52,3 = 0,84;$$



Table 1

Observation sheet time-keeping of working time

Name of performed surgical and therapeutic procedures															
Modification of the veterinary surgical table	Working time on performance of works, minutes													Total time	
	the implementation of production									time for unproductive work					
	time of preparatory and final			operational time						time spent assembling the table	transfer of the animal to the operating room for surgery and removal after	time to fix the animal on the operating table	the time spent on disassembly of the table		
	1	2	3	4	5	6	7	8	9						
Table three-section Vinogradov															
Operating table portable SOP-1															

Description of the performed manipulation

<p>1 - time putting on and removing work clothes 2 – preparation of hand surgery and assistant, getting dressed and one time taking off 3 - preparation and cleaning of the surgical table working surface 4 – preparation of the animal for anesthesia and the anesthesia 5. – preparation of the surgical field 6. - performance of specialized surgical interventions at different angles of the tabletop (15°)</p>	<p>7. - perform specialized surgical procedures at different angles of the tabletop (25°) 8. – excretion of anesthesia and conduct of inhalation of saline solution 9. – parenteral administration of medicines (polioviral-ary symptomatic treatment)</p>
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Level of employment of the veterinarian operational and normalized work when using the surgical table on Vinogradov:

$$U_z = 42.3 : 56.3 = 0.75;$$

when using a portable table SOP-1:

$$U_z = 38.3 : 52.3 = 0.73;$$

Thus, when using the surgical table by Vinogradov while conducting the castration of males is effectively used 81% of the time, the employment of a veterinarian and standardized operational work was 75%, if you use a portable table SOP-1 is effectively used 84% of the time, the level of employment of the veterinarian in the field was 73%.

As a result of the timing of working time when performing surgery to remove the ovaries in cats (sterilization) the following results:

when using the surgical table by Vinogradov:

on VPSR spent – 6.0 minutes, VOITS – 39.7 minutes, DV – 6.7 minutes, just for carrying out this operation was spent 54.4 minutes.

if you use a portable table SOP - 1 WPSR spent is 5.7 minutes, WOWPS is 38.7 minutes, DV is 8.9 minutes, just for carrying out this operation was spent 53.3 minutes.

The utilization rate of working time was

when using the surgical table by Vinogradov:

$$C_u = (37,7+6,7+0)/52,4 = 0,84;$$

when using a portable table SOP-1:

$$C_u = (38,7+5,7+0)/53,3 = 0,84;$$

Level of employment of the veterinarian operational and normalized work when using the surgical table on Vinogradov:

$$U_z = 37.7 : 52.4 = 0.71;$$

when using a portable table SOP-1:

$$U_z = 38.7 : 53.3 = 0.72;$$

Thus, when using the surgical table by Vinogradov when performing castration of females is effectively used 84% of the time, the level of employment of the veterinarian's operational work was 71%, if you use a portable table SOP-1 is effectively used 84% of the time, the level of employment of the veterinarian in the field was 72%,

As a result of the timing of working time when performing osteosynthesis of tubular bones in cats, the following results were obtained:

when using the surgical table by Vinogradov:

on VPSR spent – 6.0 minutes, WOWPS is 76.5 minutes, DV – 8.5 minutes, just for carrying out this operation were spent 91 minutes.

when using a portable table SOP-1

on VPSR spent is 5.7 minutes, VOITS – 79.1 minutes, DV – 10.1 min only for the conduct of this operation was spent 89.2 minutes.

The coefficient of use of working hours when using the surgical table by Vinogradov:

$$Cu = (76,5+6,0+0)/91=0,90;$$

when using a portable table SOP-1

$$Cu = (79,1+5,7+0)/89,2=0,95;$$

Level of employment of the veterinarian operational and normalized work when using the surgical table on Vinogradov:

$$Uz = 76.5 : 91 = 0.84;$$

when using a portable table SOP-1

$$Uz = 79.1 : 89.2 = 0.89$$

Thus, when using the surgical table by Vinogradov when performing osteosynthesis of tubular bones in cats effectively used 90% of the time, the level of employment in veterinarian operations amounted to 84%, if you use a portable table SOP-1; efficiently used 95% of the time, the level of employment of the veterinarian in the field was 89%.

As a result of the timing of working time when performing sanation of the oral cavity in dogs, the following results were obtained:

when using the surgical table by Vinogradov:

on VPSR spent – 6.0 minutes, VOITS – 35 minutes, DV – 6.0 minute, just for carrying out this operation it has been spent 47 minutes.

when using a portable table SOP-1

on VPSR spent is 5.7 minutes, VOITS – 35.7 minutes, DV – 8.3 minute, just for carrying out this operation was spent 49.7 per minute.

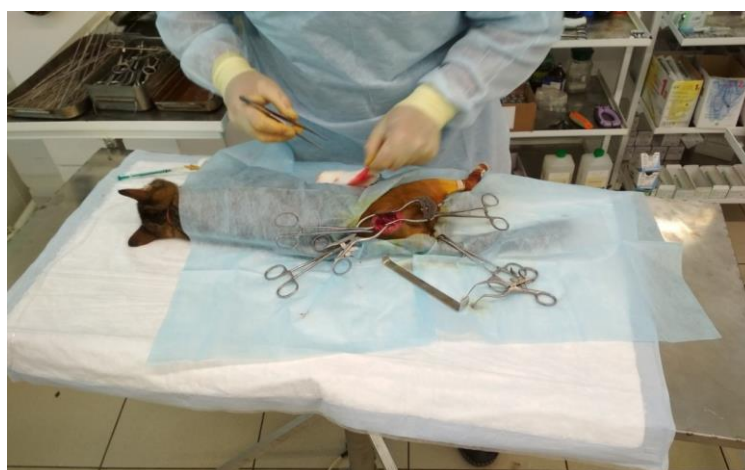


Figure 1: Comparison of bone fragments in cats on the table SOP-1

The coefficient of use of working hours amounted to at the surgical table by Vinogradov:

$$Cu = (35+6,0+0)/47 = 0,87;$$

when using a portable table SOP-1
 $Cu = (35,7+5,7+0)/49,7 = 0,83;$

Level of employment of the veterinarian operational and normalized work when using the surgical table on Vinogradov:

$Uz = 35: 47 = 0.75;$
when using a portable table SOP-1:
 $Uz = 35.7: 49.7 = 0.71;$

Thus, when using the surgical table by Vinogradov during the execution of rehabilitation of the oral cavity in dogs effectively used 87% of the time, the level of employment of the veterinarian in the field was 75%, if you use a portable table SOP-1 is effectively used 83% of the time, the level of employment of the veterinarian in the field was 71%.

As a result of the timing of working time when performing herniation in puppies, the following results were obtained:

When using the surgical table by Vinogradov:

on VPSR spent – 6.0 minutes, VOITS – 42,7 minutes, DV – 6.0 minute, just for carrying out this operation was spent 54.7 minutes.

When using a portable table SOP-1

on VPSR spent is 5.7 minutes, VOITS – 41.6 minutes, DV – 9.3 minute, just for carrying out this operation was spent 53.5 minutes.

The coefficient of use of working hours when using the surgical table by Vinogradov:

$Cu = (42,7+6,0+0)/54,7 = 0,89;$
when using a portable table SOP-1
 $Cu = (41,6+5,7+0)/53,5 = 0,88;$

Level of employment of the veterinarian operational and normalized work when using the surgical table on Vinogradov:

$Uz = 42.7: 54.7 = 0.78;$
when using a portable table SOP-1
 $Uz = 41.6: 53.5 = 0.77;$

Thus, when using the surgical table by Vinogradov during the execution of rehabilitation of the oral cavity in dogs effectively used 89% of the time, the level of employment of the veterinarian in the field was 78%. When using a portable table SOP-1 effectively used 88% of working time the level of employment of the veterinarian operational work was 77%.

As a result of the timing of working time during the day, the following results were obtained:

When using the surgical table by Vinogradov:

- time of preparatory and final works-30 minutes;
- operating time-234.2 minutes;
- the time of regulated interruptions to 12.7 minutes;
- Total spent – 300,1 minutes;

When using a portable table SOP-1:

- time of preparatory and final works-28.5 minutes;
- operational time-240.6 minutes;
- the time of regulated interruptions and 11.8 minutes;
- Total was spent-298 minutes;

The coefficient of use of working hours when using the surgical table by Vinogradov:

$$Cu = (234,2+30+12,7)/300,1 = 0,92;$$

when using a portable table SOP-1:

$$Cu = (240,6+28,5+11,8)/298 = 0,94;$$

Level of employment of the veterinarian operational and normalized work when using the surgical table on Vinogradov:

$$Uz = 234,2: 300,1 = 0,78;$$

when using a portable table SOP-1

$$Uz = 240,6: 298 = 0,81;$$

Simultaneously, the studied reserves of increase of efficiency of work groups veterinary professionals due to the elimination of ad-hoc breaks (M2)

when using the surgical table by Vinogradov:

$$M2 = (12,7:234,2)*100=5,4\%;$$

when using a portable table SOP-1:

$$M2 = (11,8:240,6)*100=4,9\%;$$

Thus, the calculations showed the following:

- when used in a daily work of veterinary specialists in the veterinary clinics of the surgical table by Vinogradov effectively used 92% of the time, the level of employment of the veterinarian in the field was 78%, and there are reserves of increase of labour productivity due to the elimination of ad hoc interruptions of 5.4%.

- when used in a daily work of veterinary specialists in veterinary clinics if you use a portable table SOP-1 is effectively used 94% of the time, the level of employment of the veterinarian in the field was 81%, and there are reserves of increase of labour productivity due to the elimination of ad hoc interruptions by 4.9%.

Summary:

Thus, the calculations showed the following:

- when used in a daily work of veterinary specialists in the veterinary clinics of the surgical table by Vinogradov effectively used 92% of the time, the level of employment of the veterinarian in the field was 78%, and there are reserves of increase of labour productivity due to the elimination of ad hoc interruptions of 5.4%.

- when used in a daily work of veterinary specialists in veterinary clinics if you use a portable table SOP-1 is effectively used 94% of the time, the level of employment of the veterinarian in the field was 81%, and there are reserves of increase of labour productivity due to the elimination of ad hoc interruptions by 4.9%.

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