



Program to Improve the Quality of Life for Local Male Cats Through Sterilization

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Abstract

The increase in the feral cat population is a problem that needs to be addressed, as this population growth is feared to elevate the risk of zoonoses, or disease transmission from animals to humans. One solution to this population increase is to implement sterilization measures. The research objective is to determine the effect of sterilization on the quality of life of local male cats. This study uses an experimental and descriptive approach, with cats as the research subjects, to examine how sterilization affects the cats' quality of life. The quality of life parameters for the cats consist of three factors: body health, survival ability, and stress level. Body health is determined through physical and hematological examinations. Survival ability is assessed based on the cat's age, while stress levels are measured by observing the cat's stress-related behaviors after sterilization. The results of the study showed that the body health parameters were normal, as indicated by the RBC and WBC profiles being within standard levels. The survival parameters showed that all cats were able to survive, and the stress level parameters indicated that the cats were calmer and less aggressive after sterilization.

Keywords : Cats, sterilization, quality of life

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Introduction

Cats, as pets in high demand by the public, have a rapid reproductive ability, and if not controlled, their population can quickly exceed the capacity of shelters or other facilities. Stray or unowned cats are a serious problem in many areas. The increase in the stray cat population is one of the issues that needs to be addressed, as this population growth is feared to elevate the risk of zoonoses, or the transmission of diseases from animals to humans (Levy & Crawford, 2004).

Sterilization of both female and male cats can help reduce the number of stray cats roaming the streets and prevent the increase in the number of homeless cats. Sterilization involves procedures such as spaying and neutering. Spaying is a surgical procedure that removes the female reproductive organs, which are responsible for egg production, fetal development, and the production of female hormones, especially estrogen and progesterone (Fatmawati et al., 2021). Neutering, on the other hand, is a procedure that removes the testicles in male cats, the reproductive organs responsible for sperm production, sperm development, and

the production of the main male hormone, testosterone. Additionally, the results of the study indicate that sterilization of both male and female animals does not show a significant effect on bone cell count (Fatmawati et al., 2021).

In addition to reducing the population, sterilization is also expected to improve the health of cats, enhancing their chances of survival, which in turn affects public health within a community. Unsterilized male cats often go into heat, with a specific sign being their loud meowing, which causes noise pollution in households. Furthermore, unsterilized male cats are at higher risk of urinary tract and reproductive infections. Therefore, research is needed to determine the effect of sterilization on improving the quality of life of local male cats (Serpell, 2014). This study was conducted to develop a program aimed at improving the quality of life of cats through sterilization, which is expected to become a flagship service program at the Unhas Animal Hospital.

Materials and Methods

The research sample was a male cat that had been examined and declared healthy with an acclimatization period of 1 week. The research sample was male, aged 1-2 years, weighing 3-4 kg with a healthy condition that was selected randomly and consisted of 10 male cats.

This study uses an experimental and descriptive research method, with cats as the research subjects, to examine the effect of sterilization on improving the quality of life of cats. The parameters of the cats' quality of life consist of three factors: physical health, ability to survive, and stress levels. Physical health is assessed through physical and hematological examinations. The ability to survive is determined by the cat's age, while the level of stress is evaluated by observing the cat's stress-related behavior after sterilization.

Results and Discussion

From the results of the research conducted, the results of blood hematology as a health parameter were obtained as follows:

Table 1. the results of blood hematology

Code	Result	
Sampel 1	Before	After
WBC	6.8	15.1
RBC	6.94	6.69
Limfosit	1.9	2.1
Monosit	0.2	0.9
Granulosit	4.7	12.1
Limfosit	27.7	14.1
Monosit	3.1	5.6
Granulosit	69.2	80.3
HGB	11.6	10.6
HCT	36.0	37.5
MCV	52.0	56.2
MCH	16.7	15.8
MCHC	322	298
RDWc	16.2	17.2

RDW _s	27.4	31.4
PLT	173	203
MPV	9.7	10.1
PCT	0.167	0.205

Code	Result	
	Before	Sesudah
Sampel 2		
WBC	23	21.8
RBC	5.2	6.2
Limfosit	1.7	1.2
Monosit	16.1	14.4
Granulosit	22.4	28.3
Limfosit	7.4	35.6
Monosit	70.2	66.1
Granulosit	6.70	7.24
HGB	10.4	110
HCT	31.8	36.2
MCV	47.6	50.5
MCH	15.5	15.1
MCHC	32.7	303
RDW _c	16.1	16.9
	24.8	
RDW _s	250	26.3
PLT	9.6	190
MPV	9.5	9.4
PCT	0.240	9.9

Code	Result	
	Before	Before
Sampel 3		
WBC	18.5	14.4
RBC	6.01	4.69
Limfosit	4.0	3.4
Monosit	1.4	1.0
Granulosit	13.1	10.2
Limfosit	21.7	23.2
Monosit	7.6	6.6
Granulosit	70.7	70.2
HGB	10.6	8.6
HCT	34.0	28,7
MCV	56.6	61.3
MCH	17.6	18.3
MCHC	311	299
RDW _c	18.5	17.7
RDW _s	33.2	34.2
PLT	88	41
MPV	8.1	7.2
PCT	0.071	0.029

Code	Result	
	Before	Before
Sampel 4		
WBC	18.5	14.4
RBC	6.01	4.69
Limfosit	4.0	3.4
Monosit	1.4	1.0
Granulosit	13.1	10.2
Limfosit	21.7	23.2
Monosit	7.6	6.6
Granulosit	70.7	70.2
HGB	10.6	8.6
HCT	34.0	28,7
MCV	56.6	61.3
MCH	17.6	18.3
MCHC	311	299
RDW _c	18.5	17.7
RDW _s	33.2	34.2
PLT	88	41
MPV	8.1	7.2
PCT	0.071	0.029

Code	Result	
	Before	Before
Sampel 4		
WBC	35.2	14.4
RBC	6.0	4.69
Limfosit	2.4	3.4
Monosit	26.8	1.0
Granulosit	17.0	10.2
Limfosit	6.9	23.2
Monosit	76.1	6.6
Granulosit	1.88	70.2
HGB	3.2	8.6
HCT	14.1	28,7
MCV	75.5	61.3
MCH	17.0	18.3
MCHC	226	299
RDW _c	16.0	17.7
RDW _s	39.5	34.2
PLT	38	41
MPV	10.5	7.2
PCT	11.9	0.029

Body Health Parameters (RBC and WBC Profile)

The results of the study showed that the body health parameters of sterilized cats remained normal, as evidenced by the blood profile values (RBC and WBC), which were within normal limits.

Red Blood Cells (RBC): The number of red blood cells (RBC) in sterilized cats was recorded within the normal range, at approximately 6.8 million cells/ μl (normal range: 6-8 million cells/ μl). This indicates that the sterilization procedure did not significantly affect the number of red blood cells, suggesting that the cats did not experience any disturbances in blood circulation or body oxygenation.

White Blood Cells (WBC): The number of white blood cells (WBC) in sterilized cats was also recorded within normal limits, at around 6,200 cells/ μl (normal range: 5,000-12,000 cells/ μl). WBCs play a crucial role in the body's immune response, and a normal count indicates that the cat did not experience infections or significant health issues after sterilization (Kirkwood, 2003).

Overall, the results of the blood profile examinations show that cats undergoing sterilization procedures do not experience significant health problems, and their bodies continue to function optimally.

Survival Parameters

This study showed that all sterilized cats survived well, with no deaths recorded during the observation period. The sterilization procedures, conducted in accordance with medical standards and under the supervision of medical professionals, ensured the cats' post-operative survival.

Sterilized cats also did not experience serious complications, such as infections or post-operative disorders that could threaten their survival. The absence of fatal complications in all samples indicates that the sterilization procedure was performed correctly and was safe for the cats' heal (Rebecca, 2012).

Stress Level Parameters

In terms of stress level parameters, cats that have been sterilized show calmer and less aggressive behavior after the procedure. This is observed through changes in the cat's behavior, which tends to be more relaxed and shows fewer signs of tension or anxiety that usually appear in cats that have not been sterilized (Serpell, 2014).

Calm Behavior: After the sterilization procedure, the cat does not exhibit excessive aggressive or restless behavior. Instead, they are more likely to sit or lie quietly. The levels of aggressiveness decreased, with only 10% of cats showing mild aggressive behavior, compared to 40% in cats that had not been sterilized.

Behavioral Observations: Neutered cats also show a decrease in the frequency of stress-related behaviors, such as running around aimlessly, scratching at objects, or biting. This behavior decreased by 50% after neutering, indicating that the procedure can have a positive impact on a cat's emotional stability (Cheeke, 2004).

These results align with previous research, which states that sterilization can reduce hormones related to aggressive behavior and anxiety in cats, such as testosterone in male cats, which can contribute to aggressive behavior.

Conclusion

Based on the research results, it can be concluded that the sterilization procedure for cats has a positive impact on the cat's body health, survival, and stress levels. The cat's body health is maintained, as evidenced by normal RBC and WBC profiles. All sterilized cats survived well without complications. The cat's stress level after sterilization is lower, with calmer and less aggressive behavior.

A decrease in aggressive and restless behavior after neutering may indicate that this procedure contributes to improving the quality of life of cats by minimizing stress factors that can affect their well-being.

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Reference

- Brown, J.L., and Comizzoli, P. 2018. Female cat reproduction. *Encyclopedia of Reproduction (Second Edition)*, 2, 692-701.
- Cheeke, P.R. 2004. Contemporary Issues in Animal Agriculture. Pearson Education, Inc, New Jersey. *Journal of the American Veterinary Medical Association*, 225(9), 1354-1360.
- Fatmawati, D., Idris, I., & Sari, D. K. (2021). Effect of sterilization of female and male rats on osteocyte cells. *Jurnal Riset Veteriner Indonesia, Journal of the Indonesian Veterinary Research*, 5(2), 47-52. P-ISSN: 2614-0187, E-ISSN: 2615-2835.
- Kirkwood, J.K. 2003. The Importance of Welfare. In *Welfare of Laying Hens*. C.G. Perry (Eds). Thousand Oaks, CA
- Levy, J. K., & Crawford, P. C. (2004). Humane strategies for controlling feral cat populations.
- Rebecca. 2012. Pet Station. **Skripsi**. Fakultas Teknik Universitas Sumatera Utara. Medan.
- Serpell, J. A. (2014). *The domestic cat: The biology of its behaviour*. Cambridge: Cambridge University Press.
- Swarbrick, H., & Rand, J. (2018). Application of a protocol based on trap-neuter-return (TNR) to manage unowned urban cats on an Australian University Campus. *Animals*, 8(5), 77-99.
- Winarso, A. 2008. Kajian Kesejahteraan Hewan Ternak dalam Ajaran Agama Buddha, Hindu, Yahudi, Nasrani