

# Anatomy of a Surgical Sexing Clinic

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The primary advantage that surgical sexing holds over the other off-site lab methods is that, in addition to accurately identifying the bird's sex, it also provides for an immediate and fairly accurate evaluation of the bird's state of sexual activity, general visceral health and, in some cases, an estimate of relative age. These factors have become increasingly more important as bird import inventories continue to dwindle and bird wholesale prices have climbed steadily upward (Don't think so? Compare the price of blue and gold macaws which have jumped from \$195 for six or more in 1983, to \$2,000 a pair in 1988.)

The penalty for paying standard wholesale prices to set up an immature macaw hen which may sit up to five years without returning a cent toward the investment of food, care or cage wire has gone up a bit. The current evaluation of bird operations in California shows that for every dollar of bird owned, aviculturists will spend an equal dollar the first year for bird purchase, wire, food, housing, care, etc. A nanday conure with scarred or disfigured gonads or abscessed air sacs is just as non-profitable as non-producing macaws, and aviculturists need to know where to invest their dollars more now than at any other time.

The routine office appointment-type surgical sexing has traditionally been approximately \$35 per bird in southern California. During the last ten years, some veterinarians have charged upwards of \$75, plus an additional fee for prerequisite lab tests and examinations. The total cost per bird, regardless of the species involved, could run as high as \$300 each. This has been done for the purpose of enhancing patient safety, and to increase client awareness of a bird's health status. This program can include certain standard and/or optional medical work-ups as is agreed upon. This program is agreed upon by each client and the particular veterinarian involved.

The requirements that my clients were presenting to me did not allow for the above-mentioned criteria, as many of the species they desired to properly pair and breed fall into the range of under a one hundred dollar value, or the number of pairs to be sexed did not allow for any extensive testing of all birds.

I was approached by several commercial breeding operations, several

The subject of surgery seems, at first glance, to be strongly out of context with the directives of domestic propagation and endangered species survival. The purpose of this presentation is to accurately identify the inter-dependency of these two subjects, as well as to promote the concepts of conservation for avian species which are in danger of, or being added to, the list of endangered birds already documented at this time.

The idea of surgical sexing clinics came about as a result of several concepts that came together coincidentally several years ago. The foremost influence came about in the form of Dr. Scott McDonald, who is well-known for his efforts to promote avicultural medicine and domestic

propagation.

Dr. McDonald was concluding his residency at the University of California at Davis at the time I was beginning my own, and his approach to the problems of aviculture as a veterinarian was both unique and effective in northern California at the time. The other major factors that presented themselves in the 1980s were the reality that foreign bird importation had begun to show signs of decreasing. Aviculturists were beginning to realize that domestic propagation could be simultaneously environmentally important and financially rewarding, and that surgical sexing offered some distinct advantages over the techniques of fecal steroid analysis or feather cytological sexing.

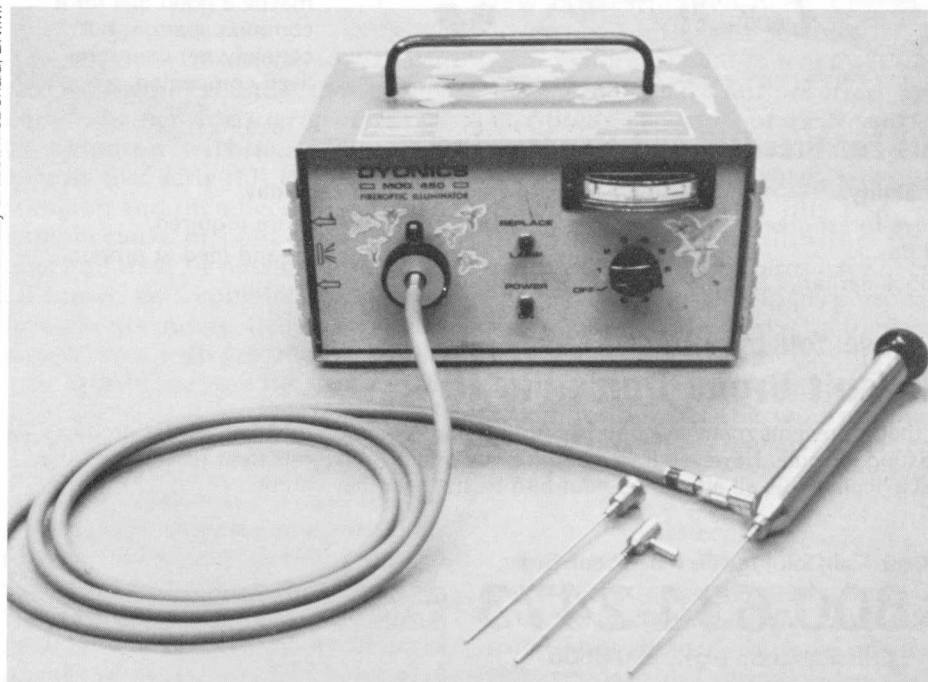


Photo courtesy of Scott McDonald, D.V.M.

*Dionics endoscope, an important piece of equipment for surgical sexing procedure.*



*Quick and careful surgical sexing with skilled hands and fiber optic endoscope.*

import station owners, and the local avian society groups to consider establishing a cost-effective means of determining sex identification, as no other similar alternative was available. Dr. McDonald advised that I consider a more extensive program to include flock health analysis and an epidemiological survey analysis service, and so the avicultural surgical sexing clinic was created as part of our In Flight avicultural service.

Certain economic factors also came into play, which were necessary to be recognized as within any business. A statistical analysis indicated that if a minimum of forty birds per clinic were sexed at a cost of \$15, the clinic could minimize its overhead, reduce the instance of clinic traffic, recover the initial investment cost (approximately \$10,000) for surgical equipment, and still assist in the efforts of domestic propagation.

The results have overwhelmingly justified our original assumptions, and the program seems to have been beneficial for all those involved. The reduced cost per patient has allowed for nanday conures to be sexed with the same effort as triton cockatoos, and the clinic has been able to meet its financial obligations. The increased volume of patients has been shifted to weekends to both accommodate the work schedules of clients and the traffic pattern of the veterinary clinic.

A great deal of this success is due to

several recent advances in medical technology. In particular, the advent of isoflurane gas anesthesia (Aerane™ by Anaquest) and the fiberoptic endoscope. Without these two pieces of equipment, the degree of risk would be greatly increased, along with the additional surgical time necessary for each patient. We have successfully anesthetized, sexed and recovered as many as 140 avian patients per day, without a single fatality, using this technique. Conversations with the Department of Anesthesiology at U.C.L.A. indicate that a new, injectable anesthesia with reversible potential under the name of Ditomidine™ may be the next step for patient safety at some point in the future, but for the present its use is restricted by law to portions of Europe only. Our clinic is looking forward to the possibility of adding this updated technology to our medical assets.

Isoflurane patients typically achieve a full anesthesia plane within approximately 60 seconds after administration is begun, and recover within 60 to 90 seconds to a fully standing and/or perching position with the ability to eat without a post-anesthesia hangover, regurgitation or incoordination, as soon as the bird desires food. This is an immense improvement over the prolonged and stormy recovery period seen with the currently available injectables such as ketamine.

The immediate post-isoflurane recovery period has not produced a single fatality in over 3,000 sexings to date, although I have been advised of a few patients expiring two to seven days after sex analysis has been performed. Due to the nature of the anesthesia, and discussions with the manufacturer, I cannot identify any conclusive link for these deaths to the anesthesia.

I suspect that these patients were typical of the phenomena of hidden or occult disease, as is so commonly documented in avian practice, and the mortalities were a result of their internal disease conditions. Necropsies are always offered in these cases and all of the patients that have been necropsied were confirmed for having medical conditions that pre-existed the event of the surgical sexing, or were fed immediately prior to sexing contrary to medical advice. Our clinic acknowledges the presence of the additional stress that surgical sexing can potentially place upon a patient, and in an attempt to fully inform bird owners that this risk does exist, our clinic requires that all clients presenting a patient for sex analysis must read, understand and consent to a standard anesthesia release form for the use of isoflurane, which includes the option of postponing anesthesia until other extensive diagnostic testing can be done at a later date.

Given that our clinic is heavily involved with the aviculturist, the obvious cost advantage and the statistically low incidence of post-surgical patient complication leads me to the conclusion that the criteria for a surgical sexing clinic is both reasonable and justified for aviculture. The same criteria many times will not apply to the hobbyist, and should not be applied to a pet bird. Cost concerns should not be given the same priority here. The numbers of pet clients requesting surgical sexing also happens to be very low so that this question is not frequently presented to us. I actively discourage sex determination for curiosity's sake despite the low complication rate, as this is an elective procedure and not to be performed casually. Many pet owners are not fully aware of the details of the process when asking and usually agree that curiosity does not justify the answers they are seeking.

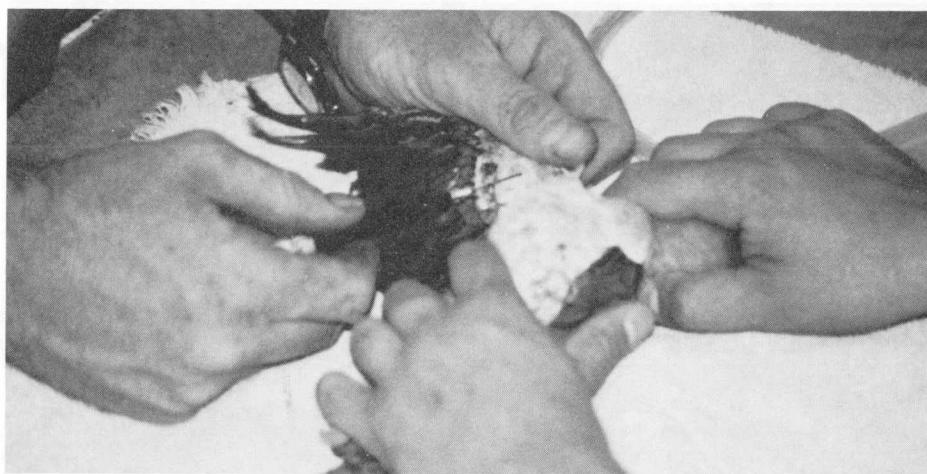
I am ardently aware that a balance has been achieved here between the potential risk of a diagnostic proce-

sure and that of cost considerations versus the ultimate in patient safety. Having authored a number of articles on avian anesthesia and patient safety, these factors are not strangers to me. The bottom line analysis still exists for a majority of commercial avian clients, in that even with the use of every possible pre-anesthesia test available, I still cannot guarantee the life of a patient under a general anesthetic anymore than a human anesthesiologist can, including even isoflurane. There are situations where sex determination must be accompanied with a zero risk factor, as is the case with very rare or endangered species, or for a valued bird kept for many years by an aviculturist. In these instances, owners are urged to consider other alternatives such as feather pulp cytological analysis (i.e., Vivagen Corp. of Santa Fe, NM) where the increase in cost and waiting period may well be justified in the opinion of both myself and the owner.

The anesthesiology department at U.C.L.A. has reported to me that the statistical incidence of anesthesia death in human patients is around one in 20,000 patients. I believe that our incidence rate is comparably favorable, especially under the financial conditions that veterinary medicine must function with, as opposed to the extensive resources that human insurance policies provide for.

This is an example of the rule of medical epidemiological statistics, where dollars are forced to be compared to life. I do not believe that a 20-fold increase in cost for pre-anesthetic evaluation can bring about 20-fold reduction in the incidence of patient mortality for this procedure. The comments I have received from avian clients support this conclusion very firmly, as do the experiences of other avian vets I have spoken with who are involved in providing this program.

The other side of medical statistics is the *perceived* reality of an aviculturist, which does not go unnoticed in my practice. I was the recipient of a comment several years ago by an avicultural client whom I had assisted for several years. I had sexed two or three of his birds over two year's time under the traditional format. Once the surgical sexing clinics were initiated, I would routinely sex up to 20 birds at each clinic for this aviculturist. In amazement, I asked this aviculturist why he hadn't



*Tattooing the sex identity of a caique after surgical sexing, right wing for male.*

pursued proper mate assignment years earlier. He answered, "It just cost too much to do it before," yet, this same aviculturist was now spending up to \$300 at each clinic as opposed to only \$75 during the entire two years prior for the very same aviary. This demonstrated to me the need to offer aviculturists an immediate benefit, in the form of an incentive, to correctly sex and pair birds. This is necessary if domestic breeding programs are ever to have a reasonable opportunity to succeed. Proper mate pairing is not a guarantee for good propagation, but homosexually paired birds are certainly guaranteed to prevent one.

The efforts to make this program available for all aviculturists have proven to be rewarding for both the clinic and our clients. We have experienced a substantial increase in our pediatric case load and have gained invaluable insight into the care and medicine for infants from these additional patient cases. Our long term goal is to gradually change our work load from a surgical one to that of a pediatric discipline. Our patient numbers for surgical sexing will become domestically raised offspring instead of the imported birds, which will soon be less available and the decreased patient load unable to financially support the high tech equipment required for this task. I have witnessed a strong growth rate in our local bird society as the new babies find their way into homes of people not previously involved with birds. This serves to strengthen the support of aviculture in the community and these new converts can act as invaluable resources when state or local governments move to legally restrict bird ownership or breeding efforts by private citizens.

I have found the sexing clinics also act as a form of introduction to aviculturists who have been unaware of the other services that an avian veterinarian can provide. A successful sexing for a new client often leads to a long standing relationship where other birds benefit from better quality care and client education programs. Surgical sexing traditionally has been sought after even by those aviculturists who do not realize the extensive evolution that has occurred within avian medicine over the past two decades. I believe avian veterinarians should utilize this opportunity to assist the uninformed bird owner when it presents itself.

The sexing clinic itself has undergone some evolution. For reasons of practicality, a person outside of the clinic such as a bird club member or breeder is assigned the task of compiling a patient schedule. Patients are scheduled every five to ten minutes with a morning and afternoon break of thirty minutes to allow for unforeseen scheduling problems and late arrivals. Clients are requested to arrive alone and to keep their birds in isolated groups in boxes or cages to prevent contact between birds from different sources. A recent study in the A.M.A. Journal of pediatric practices about the degree of infectious disease spread among children in crowded waiting rooms revealed the following results. For all the infectious diseases monitored in children both during and for an extended period of time after the clinic visit, only one virus (measles) showed any potential for infection. This example can only stand as a model, as I know of no similar studies for avian medical clinics. However, most of the diseases of children have a comparable organism (respiratory bacteria,

diarrheal agent, herpes virus, etc.) in avian species. I suspect the actual degree of contact is substantially less between bird patients than between children with their natural curiosity levels and busy, probing fingers. This study compares very closely with our own experience.

Nine years of avian practice also supports our conclusions from a practical experience standpoint. Clients are allowed to watch the procedure and I encourage clients to view the gonads of their birds for two reasons: I firmly believe that a better educated client is a better aviculturist, and sharing new knowledge is beneficial to us both. The second reason is to eliminate any later misgivings about the actual sex of the gonad or its state of health should a breeding program suffer a setback in the future, or should a potential buyer question a seller's information.

A certificate is issued with each bird, testifying to its sex, with the veterinarian's signature on each certificate. A breed registry book is also maintained with the owner's name and address, species of bird, sex, estimated level of sexual activity, tattoo markings and/or bird band number, and any special notations required such as unusual markings, health status, etc. This book is very valuable should a mate be needed for a particular bird in the future, or if a question arises upon purchase of a bird that was previously sexed by our clinic. The client names and numbers are held confidentially in order to

maintain aviary security, unless specifically released by the owner.

Sanitation and disease transmission has always been a recurring question among our clients and ourselves. In order to reduce the risk of passing microbial agents between bird groups, I disinfect the fiber optic equipment and surgical blades in gluteraldehyde (Wavicide-01™) solution. Sterile, autoclaved gauze is used for fluid removal present on any bird and clean towels are changed between each group of birds to prevent feather dust or fecal contamination from occurring. The surgeon's and technician's hands are disinfected with chlorhexidine or alcohol spray between patient groups. The face masks and anesthetic hardware is also cleaned with Wavicide-01™ spray between groups. I have not had any patients returned to me with an infectious disease or an internal infection to date following approximately 5,000 sexings. Discussions with three other avicultural vets with an accumulated total of about 40,000 surgical sexing patients also report the same results.

I am pleased to note that two other veterinary clinics in our practice radius have begun to offer surgical sexing clinics as well. I personally believe that this increase in service for aviculturists and the increased contact between avian vets and breeders is necessary if we are going to change the current predictions for aviculture. The requirements for offering such clinics can be great as

the equipment costs are high, the format is not one taught in veterinary schools, and the veterinarian must have already achieved a certain level of acceptance with the local avicultural community. It is also quite different for most veterinarians to practice a skill in such intimate contact with clients that is generally reserved for the strictly off-limits area of the clinic. Forethought and thorough planning is necessary to prevent client congestion and confusion from turning a sexing clinic into a cauldron of chaos.

I still find some resistance to this concept among a few professionals, although I fail to see the wisdom in such a position. I fully agree that not all veterinarians should attempt this undertaking, as it requires a high level of confidence in one's skills and people management. Not everyone is made for riding broncos either, and personal preference still counts for a great deal. This is a specialty service and if a veterinary clinic is offering service for aviculturists, I think this one is of great value for its clientele.

I also believe just as firmly that this service probably is not appropriate for a strictly pet bird clientele where other priorities present themselves as a reflection of the client's needs. I think rather than attempting to assess how the process is done correctly, each person should consider how things should be done correctly for you and the client's birds.

The final evaluation as to whether surgical sexing clinics are necessary or not will be long in coming. If the predictions of the major bird importers and conservationists are accurate, we should see some major trends emerging in about three years. Hopefully, the aviculturists we are assisting now will have an adequate supply of replacement stock and proven breeders for trade purposes when the traditional commercial sources are largely gone. Considering that many doemstically bred psittacine species become sexually active at around three years of age, this gives us just about the right amount of time to fill an otherwise unmanageable time gap.

I would rather be in a position to have an abundance of clients with proven breeders at a time of limited import stock and prove myself incorrect, than to wish I had listened more closely to what many veteran aviculturists have repeated to me more times than I can remember. ●

Photo courtesy of Robert Clipsham, D.V.M.



Quarantine import station holding cages. An increasingly rare sight — banks of cages housing singles and pairs of macaws.