

Etiology, Incidence and Economic Significance of Dystocia and Recommendations for Preventive Measure and Treatment to Reduce the Incidence of Dystocia: Review

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Abstract: Dystocia is the inability of the dam to deliver its young through its own effort and is a major cause of calf loss in cattle herds with a large economic impact on farmers. The causes of dystocia can be maternal or fetal in origin and its incidence is high in beef than dairy, primipara than multipara cattle and in male than female calves. Cases of dystocia should be attended without any delay and its sign allow obstetrician to identify the exact point at which normal birth ceases and dystocia occurs. The history of a case should be taken and a general clinical assessment and examination should be carried out. It is important to evaluate vital signs of the unborn calf because they influence the prognosis and the choice of the obstetric treatment and /or equipment used. The specific examination should be undertaken only after the animal has been properly restrained and the obstetrician should have the help of assistants who diagnosis and treat the case either by mutation, forced extraction, fetotomy and or by caesarean section. In practice, economic considerations have to be taken in to account to ensure that the cost of the proposed treatment can be met. After correction of different dystocia cases by different obstetrical operations, obstetricians ensure the wellbeing of mother and young after delivery. Like other diseases and disorders, veterinarians are in the unique position to prevent the incidence of dystocia.

Key words: Cow • Dystocia • Management

INTRODUCTION

Dystocia is defined as prolonged and difficult parturition with assistance frequently being required. For purpose of formulating a clinical management plan for an individual animal, it is convenient to divide the causes of dystocia into those of maternal origin and those of fetal origin [1]. The major cause of dystocia is fetal/maternal disproportion [2]. The incidence of dystocia in cattle has been widely studied because of its effects on productivity [3] and the overall incidence varies with the species and with breeds within the species. The bovine species is most often affected [4]. The most obvious detrimental offspring outcome of dystocia in cattle is the birth of dead or dying calves [5]. If the animal fails to reproduce, which is the first and most important requisite of the cow-calf system, the breeder will soon be out of business [6]. Therefore; the objectives of this review are:

- To review the etiology, incidence, sign and economic significance of dystocia and how to handle and treat it in the cow.

- To review on immediate care of the newborn and the cow following delivery and on the prevention of the incidence of dystocia.

Dystocia

Causes of Dystocia: From, a clinical perspective, the etiology of dystocia is multifaceted and includes defects in the dam or the fetus and management factors, or a combination. For purpose of formulating a clinical management plan for an individual animal, it is convenient to divide the causes of dystocia into those of maternal origin and those of fetal origin [7].

Maternal Cause of Dystocia: Problems with the dam that impede or prevent delivery include a lack of expulsive force and abnormalities of the birth canal [7]. The absence of uterine contractions or inertia may be primary or secondary. Primary uterine inertia that is due to excessive stretching is common in multiple pregnancies in cattle. Secondary uterine inertia is due to exhaustion of the uterine muscle secondary to obstructive dystocia [8].

Delivery may be inhibited by inadequate size of the maternal pelvis, pelvic deformities, incomplete dilatation of the cervix and uterine torsion. Stenosis of the vulva and vestibule may be the result of immaturity or may be a heritable defect in some breeds [7].

Fetal Cause of Dystocia: Broadly, the fetal origin of dystocia can be divided in general to the abnormal 3p's and excessive fetal size relative to the maternal pelvis (fetopelvic disproportion) [9]. The normal delivery is made longitudinal, in the anterior presentation, dorsal sacral position; with bilateral foreleg extension [10]. Spontaneous delivery with other fetal presentation, position, or posture is unlikely unless the fetus is quite small or the dam's pelvis is unusually large [7]. Deviation of the head and flexion of the various joints in anterior presentation, flexion of both hind limbs (breech) in posterior presentation, or twins may cause dystocia [8].

The most common cause of dystocia in cattle is fetopelvic disproportion. The situation is most common in heifers where the fetus is of normal size for its breed but the maternal pelvis is of insufficient size (relative oversize) or the fetus may be unusually large and cannot be delivered through a pelvic canal of normal size [7].

Epidemiology of Dystocia: The incidence of dystocia in cattle has been widely studied because of its effects on productivity. It is less common in dairy than in beef cattle. In relation to parity, there were 66.5%, 23.1% and 14.3% assisted deliveries in 1st, 2nd and 3rd calving respectively [3]. The incidence of dystocia varies but generally is more common among first-calf heifers [7]. The overall incidence of dystocia varies with the species and with breeds within the species. The bovine species is most often affected. Maternal dystocia occurs less frequently than fetal dystocia and has recorded 85.5% of fetal dystocia and 14.5% maternal. Dystocia is more common in primipara than multipara and in male than female calves [4]. Calf sex is a major factor that influences dystocia and table (1) demonstrates that the majority of females to have calving difficulties are 2- year old cows (first-calf heifers). Even though birth weights increase as a cow ages, dystocia decreases [11].

Signs of Dystocia in the Cow and Evidence of Fetal Life:

Dystocia (difficult birth) occurs when the 1st or second stage of labor is prolonged and assistance is required for delivery. No clear boundaries exist between dystocia and eutocia (normal birth), but guidelines based on progress and duration of the delivery may aid the veterinarian and the producer in deciding when they interfere with the birth process [7].

Identifying the exact point at which normal birth ceases and dystocia occurs is not easy. The calf can survive for up to 8 hours during 2nd stage labor but delivery time is normally much shorter than this. Specific signs include: prolonged, non-progressive, 1st stage labor; the cow standing in an abnormal posture during 1st stage labor-in cases of uterine torsion the cow may stand with a dipped back posture; straining vigorously for 30 minutes without the appearance of the calf; failure of the calf to be delivered within 2 hours of the amnion appearing at the vulva; and obvious malpresentation, malposture, or maldisposition- for example the appearance of the fetal head but no forelimbs, the tail but no hind limbs, the head and a single forelimb [12].

Dystocia also has effects on stress physiology, as evidenced by increased serum cortisol concentrations in dystocical calves after birth together with decreased cortisol concentrations during a cold exposure test. Moreover, meconium staining, a sign of intrauterine stress, was more common in dystocia-affected calves whereas plasma lactate concentrations, indicative of anaerobic challenge, were significantly greater [13]. It is important to evaluate vital signs of the unborn calf because they influence the choice of the obstetric treatment [14].

The fetus should be examined: whether the fetus is living or dead. The presence of a living fetus is indicated by the reflex movements in the natural orifices, such as the tongue reflex after seizing it, the movement of the jaw, the eyelid reflex, sphincter contraction; and also by pulsation in the umbilical arteries. Signs of death are absence of reflexes, absence of reflexes pulsation in the umbilical cord, an abundant discharge of meconium about the anus and finally cutaneous emphysema [15].

Table 1: Association between calving difficulty and age of dam or calf size

Age of dam(year)	Sex of calf			
	Male		Female	
	Dystocia (%)	Body weight (lbs)	Dystocia (%)	Body weight (lbs)
2	60 ± 2.3	72.4 ± 5.4	39.2 ± 2.4	66.1 ± 5.6
3	18.9 ± 3.1	78.2 ± 7.3	8.2 ± 2.9	72.3 ± 6.8
4 and 5	6.3 ± 3	81.1 ± 7.1	3.6 ± 3.3	73.5 ± 7.7

Source [11]

Table 2: Effect of calving difficulty on detection of estrus, conception rates and pregnancy rates:

Group			During AI		
Dystocia class	Cow age	Number of cows	Detected in estrus (%)	Conception rates (%)	Overall pregnancy rate(%)
No dystocia	2	584	68.3	66	79.6
Dystocia	2	366	59.3	50.6	71.4
No dystocia	3	451	71.8	43.6	86.6
Dystocia	3	69	55.1	46	72.6
No dystocia	4	388	86.1	77.9	89.7
Dystocia	4	31	77.4	64.1	64.1

Source [11]

Economic Significance of Dystocia: The consequences of dystocia are numerous and will depend up on the severity. Firstly, there are the financially unquantifiable effects on the welfare of dam and offspring. Secondly, there are the quantifiable financial consequences [3].

Dystocia is also the number one cause of calf mortality in the first 96 hours of life [2] and increased likelihood of puerperal disease in the dam; and increased likelihood of subsequent culling of the dam [16]. Difficult births increase direct costs of the herd (veterinary fees, calf or cow death or both and extra farmer labor), as well as indirect costs, such as an increase in the risk of subsequent unfavorable health events, an increase in culling rate and a reduction in yield. Moreover, dystocia can negatively affect reproductive traits, such as days open or number of services per pregnancy [17].

Moreover, dystocia-affected calves suffer increased mortality and morbidity, decreased transfer of passive immunity and important physiological and behavioral changes. Extended periods of labor, contractions and trauma during difficult parturitions increase hypoxia and acidemia in the neonate. Important physiological changes also occur in calves experiencing dystocia. For instance, initial rectal temperatures after birth were greater in dystocia-affected dairy calves, but later temperatures were less than in eutocial calves [13]. There are several causes of disease and death in newborn calves. In many locations, the leading causes of beef-calf deaths are related to difficult births (dystocia). Looking only at the effects of calving difficulty on the calf, we find the following relationships. First, the more difficult the calving difficulty, the greater risk for infectious disease. Typically, this is reflected by higher incidences and death loss associated with either diarrhea or respiratory disease. Second, the more difficult the calving difficulty, the harder it is for the calf to maintain its body temperature following calving [18]. This is illustrated in the following graph.

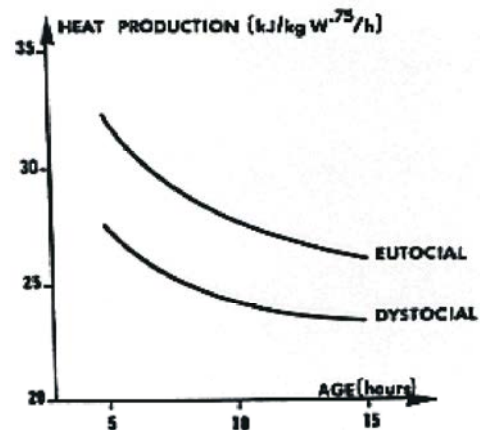


Fig. 1: Relationship between calving difficulty and body heat production of the calf:

Source: [18]

For producers using a short breeding season, estrus expression is important for either AI technicians or a bull. First-calf heifers with greater incidences of dystocia tend to have poorer fertility responses. Detection of estrus, conception rates and overall pregnancy rates are all factors negatively affected by dystocia [11] Table (2).

Procedures to Handle Obstetrical Cases

History of the Case: As the preliminary examinations and preparations for handling the dystocia are being made [9] much of the histories are the outcome of questioning of the attendant, but many points also will be elicited from personal observation of the animal [15]. This information should include: the duration of gestation; the previous breeding history; the length of time the animal has been in active labor; what is the nature of straining-strong or weak, intermittent or regular, increasing or decreasing in frequency? Has allantoic sac ruptured, the amniotic sac appeared at the vulva. This information is useful and necessary for the intelligent examination and handling of dystocia case [9].

In case of serious emergency, time may not permit the taking of a full case history but whenever possible this should be done [12]. If the clinician is not already familiar with the client's management style, it can be useful to gain a brief summary of previous dystocia cases and breeder management and information on the bull used for the mating period. To save time, much of this information can be extracted during conversation as the clinical evaluation proceeds. It is important to know how long the animal has been in labor [7]. It is also important to determine whether parturition has started prematurely or is it at full term. The progress of the birth can be assessed from the duration and intensity of labor contraction, time of rupture of the fetal membranes and appearance of fetal parts at the vulva [19].

Examination of Physical and General Condition of the Cattle:

The general examination of the patient with dystocia include its physical condition whether it is thin and emaciated, too fat, or in good condition. If the animal is recumbent the veterinarian should determine; is it able to rise or is it exhausted or is it affected with obturator paralysis. The pulse, temperature and respiration rate should be noted. In most dystocia cases the pulse and respiration rate moderately elevated and the temperature may be slightly higher than normal due to the efforts at parturition [9]. Cows and heifers should be allowed a reasonable amount of time to spontaneously deliver their calves. If an adequate time of or the first or second stage of labor has been exceeded, examination is indicated. Heifers should be allowed a longer time for spontaneous delivery than is required in pluriparous cows [7].

Knowing the normal parturition events is important to diagnose and treat any dystocia cases; so stages and events in normal parturition are illustrated in the Table 3.

The nature of the vulvar discharge, whether it is watery, mucoid, blood, or fetid will often indicate the condition of the fetus. If much fresh blood is present,

injury to the birth canal has probably occurred due to the intervention of the owner or someone else. The character of the fetal membrane if hangings from the vulva are of further assistance in determining the condition of the fetus and the length of the time the dystocia has existed. If a portion of a fetus protrudes from the vulva its condition and position and posture should be observed. The vulva itself should be noted to gain information on the amount of edema or trauma present as an indication of the length of time the dystocia has existed [9].

Fetal movement should be noticed at the cow's left flank and if this is vigorous, it indicates the placental separation which causes fetal anoxia and hyper motility. After rupture of amnion, the fetus is examined with the hand to determine its presentation, position and posture [14].

Restraint and Specific Examination of Cattle:

The specific examination consisting of the detailed examination of the genital tract and fetus should be undertaken only after the animal has been properly restrained, as the obstetrical operations usually follow immediately after this examination. In range cattle a well-constructed chute is desirable, or cows might be fastened securely with a rope halter in corner of a large box stall. If they kick, a nose lead will often divert their attention [9]. Animals may be particularly aggressive and potentially very dangerous at parturition and obstetricians must ensure their own safety and that of the owners, attendants and assistants while the patient is being examined and treated [12].

The animal's external genitalia and the surrounding structures should be washed thoroughly with warm water and soap. The tail should be held to one side by an assistant or tied with a tail rope over the back to the opposite elbow. The operator should wash and lubricate his arms with water and soap before making an examination of the birth canal and fetus [14].

Table 3: Stages of calving

Stage and time	Events
Preparatory or/ Stage 1 (2 to 6 hours)	Calf rotates to upright position. Uterine contraction Uterine contractions begin.
Water sac expelled Delivery or/ Stage 2 (1 hour or less)	Cow usually lyingdown. Fetus enters birth canal.
Front feet and head protrude first. Calf delivery completed. Cleaning or/Stage 3 (2 to 8 hours)	caruncle-cotyledon (button) attachments relax. Uterine contractions expel membranes.

Source: [20]

If only feet are presented, then you must decide if they are front or back feet. Front feet have 4 joints that flex in the same direction (coffin, pastern, fetlock and carpus) before the elbow goes the opposite direction. The back leg has only 3 joints that flex in the same direction (coffin, pastern, fetlock) before the hock goes in the other direction. If the legs are front legs, make sure they are from the same calf by tracing them back to the same body [21]. If the history of the case leads the examiner to know or suspect that others have been examining and attempting to relieve the dystocia, it is extremely important that the birth canal and caudal portions of the uterus be examined carefully for evidence of trauma [22]. We handle dystocia because to save the life of the dam and the calf and to maintain the future fertility [3].

Obstetrical Equipment: Protective clothing, rubber gloves and sleeves can be worn, when indicated, to prevent infection and odors from contaminating the arms of the operator [9]. Instruments for traction are: Obstetrical (OB) cords and straps, OB chains and handles, OB snares, OB hooks (long and short, blunt and pointed), OB forceps and OB fetal extractors (Fig.2). Instruments for repulsion and rotation are: Kuhn's Crutch, OB repeller with or without spearhead, detorsion rod and OB forceps. Instruments for sectioning are: fetotomy knives (straight or curved), BP scalpel (naked or guarded blade), fetotomes (various types), OB chisel (plain or guarded) and various types of wire saws [12].

Water-proof parturition gown and gumboots; three nylon calving ropes of different colours with short wooden cylindrical handles; a lubricant-synthetic colloidal gels are very useful and at least 750ml should be available for calving. Soap and water are the traditional obstetrical lubricant and liquid paraffin may also be used

as lubricant; Drugs: oxytocin, calcium borogluconate, dextrose solutions, injectable antibiotics, uterine pessaries, TAT, clenbuterol; and warm water [14].

Assistance Required: Ideally the obstetrician should have the help of three assistants. One to manage the head of the patient and two to assist with fetal delivery at her rear end and to prevent the cow from swinging her rear end around during examination and treatment [14].

If the operation is to be carried out on the standing cow, one attendant will be required to be restrain the patient, but if a recumbent position is chosen at least two experienced assistants are necessary. Although cesarean section can be carried out single handed, skilled surgical assistance in the form of a colleague or veterinary nurse makes the procedure both simpler and safer. An additional assistant to help with removal of the calf and its care after delivery is advisable. If an emergency arises with either the cow or calf during surgery, the presence of skilled help will make resolution of the problem and maintenance of asepsis much easier [12].

Obstetrical Operations

Mutation: Mutation is defined as the process by which a fetus is restored to normal presentation, position and posture by repulsion, rotation, version, or extension of extremities [7]. Abnormalities of fetal posture generally are easier to correct when the dam is standing. After the veterinarian has brought each part of the fetus into its normal posture, the cause of dystocia is usually relieved and the fetus will be expelled normally, or parturition aided or completed by traction [9]. If mutation cannot be completed in 15 to 30 minutes, an alternate method for delivery should be selected [7].



Fig. 2: Some obstetrical equipments. Source [23]

Repulsion: Repulsion, sometimes called retropulsion, consists of pushing the fetus out of the maternal pelvis or birth canal into the abdominal cavity and uterus, where space is available for the correction of the position or posture of the fetus and its extremities. It is usually necessary because the birth canal or pelvic cavity is so narrow and so confining that it is impossible to correct deviations in position or posture without providing more room in which to manipulate the fetus or its long extremities. Repulsion may be accomplished by the operator's arm, the arm of an assistant, or by crutch repeller. Repulsion is difficult or impossible in the recumbent animal resting on its sternum, as the abdominal viscera are pushing the fetus back toward the pelvis. If the animal is recumbent it should be laid on its side with its four legs extended [9].

The fetus and birth canal must be well lubricated through a stomach tube by a means of a pump. It may be necessary to abolish abdominal straining with an epidural anesthetic, but the expulsive efforts of the dam will not subsequently be available for delivery of the fetus. Care should be exercised in repelling a fetus, because uterine rupture may result from excessive pressure [7].

Rotation: It is defined as turning the fetus on its longitudinal axis to bring it from dorsoilial or dorsopubic position to dorsosacral position. Partial rotation also is an essential component of the routine vaginal delivery technique to ensure that the fetal hips enter the maternal pelvis on a diagonal. In many cases, rotation can be accomplished by the hand and arm of the operator. By grasping the humerus of the ventral limb near the shoulder joint, the operator lifts the fetus upward and medially. Alternatively, the fetal limbs can be crossed and rotational force applied to bring the fetus to dorsosacral position. In difficult cases, use of a detorsion rod may be necessary, but excessive force that may result in injury to the dam and the fetus should be avoided [7].

Extension: Extension refers to the extension of flexed joints when postural defects are present. It is carried out by applying force to the end of the displaced extremity so that it is brought through an arc of a circle to the entrance of the pelvis. The force is applied preferably by hand or, failing that, by snare or hook [3].

Version: Version is defined as the rotation of the fetus on its transverse axis into an anterior or posterior presentation [9]. It is usually limited to 90 degrees and

attempts to convert caudal presentation to cranial presentation are not likely to be successful and will commonly result in uterine tears [7].

Delivery by Extraction: It is the withdrawal of the fetus from the dam through the birth canal by means of the application of outside force or traction [9]. The application of force to the presenting parts of the fetus in order to supplement, or in some cases to replace, the maternal force. Such force is applied by hand or through the medium of snares or hooks. Limb-snares are fixed above the fetlocks and the head snares may be applied by which the loop is placed in the mouth and up over the poll and behind both ears, leaving both ends of the rope protruding from the vagina. A very important consideration is a magnitude of the supplementary force which may be used, since excessive force inappropriately applied can cause several traumas to dam and fetus. In the cow, it is felt that well coordinated poll of four average persons should be the limit [3]. In posterior presentation traction may be applied to the fetal pastern or above the hook by the use of obstetrical chains [9].

Delivery by Fetotomy: If delivery by traction is not possible without danger to the dam or the fetus, the veterinary obstetrician must consider the option of CS or fetotomy [7]. Fetotomy is defined as those operations performed on the fetus for the purpose of reducing its size by either its division or the removal of certain of its parts. It is indicated in oversized fetus, abnormalities in presentation, position, or posture or a combination of these which cannot be corrected by mutation, when the fetus is emphysematous and the dam is toxic, fetotomy is generally recommended in preference to c-section when the required operation is simple, involving only one or two procedures. In cases where more complicated fetotomy procedures would be required, a caesarean section should be recommended [14]. The advantages of fetotomy are: avoids the major abdominal surgery of caesarean section, less assistance required than caesarean section, shorter recovery time/less aftercare and less cost [24] and its disadvantages are: it may be dangerous, causing injuries or lacerations to the uterus or birth canal by instruments or sharp edges of bone; and also it may take a long time causing exhausting of both the dam and the operator [9]. A case where the calf is already dead, fetotomy is the method of choice due to optimal cow survivability [18].

Fetotomy can be complete, when a whole fetus is divided into smaller pieces, or partial, when a small part of the fetus, such as a leg, is removed [12]. In general, fetotomy should not be attempted unless: proper fetotomy instruments are available, there is adequate space in the birth canal for introduction and alignment of the fetotome, the patient can be restrained in an area that allows adequate space for operating the wire saw, adequate help is available [25].

Cesarean Section: It is the delivery of the fetus, usually at parturition, by laparohysterotomy. The goals of the cesarean section are preservation of the dam and calf and the future reproductive efficiency of the dam [26].

This operation is performed when mutation, forced extraction and fetotomy are deemed inadequate or too difficult to be employed to relieve the impending or present dystocia or when it is desired that the fetus be delivered alive [12]. Indications for cesarean section include fetal oversize, fetopelvic disproportion, incomplete dilation of the cervix, irreducible torsion of the uterus, hydrops of the fetus, hydrops allantois or abnormalities of presentation, position or posture, ventral hernias and prolonged cases of dystocia [9]. Cesarean section is now a routine obstetric procedure in cattle practice. It is the method of choice when you are dealing with a live calf and want to optimize calf survivability [18]. Good surgical technique, including gentle tissue handling, appropriate suture materials and patterns and adequate in folding of the uterine incision to prevent leakage, combined with antibiotics and anti-inflammatories when indicated can help minimize detrimental adhesions that may affect adversely the future reproductive efficiency of the cow [26]. Most surgeons use a standing left paramedian celiotomy to perform cesarean section in the cow. The left oblique approach is preferable under most circumstances, because the uterus is readily exteriorized, limiting peritoneal cavity contamination. Alternative approaches are available that will further limit the potential for contamination. Practitioners are encouraged to consider alternate approaches for certain conditions [27].

Generally the prognosis of obstetrical case varies widely between the different causes and species affected. In general the more prolonged the dystocia, the poorer the prognosis. The greater the trauma, irritation and infection of the birth canal caused by inexperienced layman attempting to relieve the dystocia, the graver the prognosis [9].

Care of Post Delivery

After Care of Mother and Young: Although the main responsibility for this rests with the patient's owner, the obstetrician must ensure that mother and young are well after delivery and advice on specific aspects of their care if appropriate [12].

Care of the Newborn: An animal care taker who is aware of the challenges to the survival of the neonates will likely take steps to increase the chance of survival. The respiratory passages should be checked for pieces of placental membrane or mucus that could prevent respiration. In cold weather, the newborn should be dried and if possible placed in a clean, dry shelter. In the summer, a shade will be beneficial to survival [12]. The first meal is very important for the health of the calf and the calf's first feed of colostrum is essential within five hours of birth [13]. If the newborn has not nursed within the first hour, it should be assisted in obtaining a meal of colostrum, to provide both nutrients and antibodies. If the mother dies during parturition, colostrum from another female of the same species should be provided in a pail or bottle with a nipple. Normal milk will provide most needed nutrients, but will not contain the needed antibodies [28]. For the first couple of days: remove the placenta so that the cow cannot eat it; allow the cow to lick the calf dry [12].

In dystocia cases, it is necessary to wipe the mucus from the nostrils to permit breathing; or, more rarely yet, artificial respiration methods may have to be applied to some calves. This may be done by blowing in to the mouth and permitting the calf to fall gently. The cow should be permitted to lick the calf dry. To lessen the danger of infection, the navel cord of the newborn calf should be treated at once with a 2% solution of tincture of iodine Cady [28] or other strong alcoholic drink will do if there is nothing else [12].

Post Natal Check of the Cow: After delivery of the calf the uterus must always be checked for evidence of another fetus. This process is repeated after each calf until the obstetrician is sure that the uterus is empty. The birth canal is checked for signs of damage and hemorrhage. Uterine involution usually commences immediately after the birth of the calf. If uterine tone feels low (the uterine walls are flabby) 20 IU of oxytocin should be given by intramuscular injection. The udder is checked again for signs of mastitis [12].

Table 4: Recommended ages and weights to breed heifers

Breed	Weight (lbs)	Age (Mo.)
Holstein and Brown Swiss	750-850	15-18
Ayrshire	650-750	14-17
Guernsey	550-650	14-17
Jersey	550-650	14-17

Source [30]

Table 5: Dry matter intake requirements of replacement heifers

Heifer weight(lbs)	Daily dry matter intake(lbs)	Heifer weight(lbs)	Daily dry matter intake(lbs)
400	9.2	800	18.4
500	11.5	900	20.7
600	13.8	1000	23
700	16.1	1100	25.3

Source [19]

Prevention and Control: As with all diseases and disorders, veterinarians should be endeavouring to prevent and reduce the incidence of dystocia [3].

Foetomaternal disproportion is one of the major contributors to dystocia and this can be prevented with proper reproductive management. Because heifers are generally smaller than cows, they have an increased risk of dystocia. The size of heifers at breeding should average 66 percent of their mature weight, with a minimum of 60 percent [19]. The National Association of Animal Breeders (NAAB) publishes genetic evaluations for Holstein AI sires ranking them for the ease with which their calves are born, feed heifers to calve with adequate size at 24 months and cows so they are in good flesh to calve once each year but not over conditioned, give the cow adequate time to prepare for delivery, observe strict sanitation procedures when examining a cow, provide detailed, attentive neonatal calf care [28]. Heifers should calve with at least a BCS (body condition scoring) of 5 or greater [11].

Heifer pelvis assessment can be carried out to select replacements for the herd. Those heifers with a small pelvic area before the breeding season may then be culled or selectively mated to easy calving bulls and those with a small pelvic area at the time of pregnancy examination may be aborted, culled, or identified for careful observation at calving. Sires can be selected for ease of calving and estimated birth weights [11].

Feed cows and heifers to calve in good condition without being fat because fat cows tend to experience more calving problems [28]. Nutrition should be maintained in heifers to allow modest rates of gain over the pregnancy period. Restricting food in the late stages of pregnancy does not prevent a large calf and leads to a weak labour and increased dystocia rates [11].

Not all dystocia can be prevented, such as malpresentations and early intervention is paramount in ensuring a live birth. Farm workers need to be trained to deal with a dystocia and recognise when further help is needed. A delay in assisting may mean the loss of the calf or injury and even death of the cow [11].

CONCLUSION

Dystocia cases are stressful events for both mother and offspring with potentially lifelong consequences and have a large economic impact on farmers due to calf death, injury or death to the cow, veterinary cost, as well as the decrease pregnancy rate of the cow after losing a calf and has a detrimental effect on the welfare of the cow and the calf. The inability of the dam to expel the fetus at parturition through the birth canal without assistance and the veterinarian is in a unique position to assist and improve the profitability of producers. The incidence of dystocia is common in first-calf heifers of both cattle production, but generally it is more common in beef than dairy cattle. Improper time of intervention is avoided by observing signs of dystocia. The success of obstetrical operation depends on correct history taking, good general and specific examination of the cow, availability of obstetrical equipments and assistants. If corrective measures like fetal mutation and extraction have failed, caesarean operation and/or fetotomy are other choice of measures. After treatment intervention or delivery the respiratory function of the calf is assessed and assisted to suck milk; and the reproductive organ of the cow is examined for other calf and/or other abnormalities. The incidence of dystocia is prevented by proper nutrition or pregnant heifers and cows should be in good condition, especially in the last one-third of their pregnancy;

sire selection for decreasing the calf size will also significantly help prevent dystocias; observe the calving and early intervention are important to avoid dystocia.

Based on this conclusion the following recommendations are forwarded:

- Make awareness to the public that effect of dystocia not only for the household individuals but also to the country in general and aware them the predisposing factors to reduce the incidence of dystocia.
- Educate the owner to come to veterinary clinic early in dystocia cases and to tell the truth history.
- The obstetrician should have adequate knowledge to take measure to get live calf and mother and obstetric cases should always be regarded with urgency.
- Mobile veterinary service and adequate equipment should be present in every clinic.
- Obstetrician must ensure that mother and young are well after delivery and advice on specific aspects of their care if appropriate.

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